

Nuclear weapons effects exaggerations and effective countermeasure taboos

- [Protection is needed against collateral civilian damage and contamination in conventional, chemical and nuclear attack, with credible low yield clean nuclear deterrence against conventional warfare which, in reality \(not science fiction\) costs far more lives. Anti scientific media, who promulgate and exploit terrorism for profit, censor \(1\) vital, effective civil defense knowledge and \(2\) effective, safe, low yield air burst clean weapons like the Mk54 and W79 which deter conventional warfare and escalation, allowing arms negotiations from a position of strength. This helped end the Cold War in the 1980s. Opposing civil defense and nuclear weapons that really deter conventional war, is complacent and dangerous.](#)

[Hiroshima's air raid shelters were unoccupied beca...](#)

- In 1,881 burns cases in Hiroshima, only 17 (or 0.9...
- Dr Harold L. Brode's new book, Nuclear Weapons in ...
- 800 war migrants drowned on 22 April by EU policy:...
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Archives

Friday, October 09, 2015

Russian anti-terrorism policing the world to keep us safe: another Cold War

Putin Crushes BBC Smartass



*I have to blog this **Cold War propaganda style video from "Russian Insider", titled "Putin Crushes BBC Smartass"** (the "Smartass" being the esteemed **BBC's John Simpson**, CBE). Putin argues that his military budget is only \$50 billion and that America's is 10 times bigger: "And you're telling me I'm the aggressor here? Have you no common sense at all? ... I won't get into the Ukrainian question today. ... Sanctions have been placed on the Russian economy. That is illegal."*

There is a case to be made that Russia gave up communism and the USSR when the Cold War ended in 1991, and that by - making a mountain out of a molehill over its invasion of Crimea last year - the West is treating Russia the way that Germany was treated after WWI (*leading to resentment and another war*). Sanctions on Russia may be a long-term error. America put sanctions on Japan after it invaded China in 1937, eventually leading to the desperate attack on Pearl Harbor, 7 December 1941. If the West wants to control Russian expansionism and influence in Syria after the Crimean invasion last year, we should get ready for another Cold War. Otherwise, if we give up, Russia may take over the job of policing the world, building up allies and possibly a replacement for the USSR in the process. Perhaps with a lucrative capitalist empire, they might end corrupt tactics (such as poisoning dissidents in London with polonium-210 in their tea), just as they eventually ended communism.

Showing strength may give Russia the excuse to respond likewise, but showing weakness may encourage them to take over the world.

Jeremy Corbyn, Britain's Labour Party leader and probable next PM rejects credible nuclear deterrence. This is the triumph of stupid secrecy on the truth about tactical nuclear weapons capabilities to deter conventional war or at worse to reduce (not increase) the civilian collateral damage from war



There's been some concern **after BBC Political Editor Laura Kuenssberg interviewed the probable next Prime Minister, hard left wing CND supporter and Marxist Jeremy Corbyn, asking him if he will press a button to launch a nuclear armed Trident SLBM**, and he opposed nuclear deterrence:

Laura Kuenssberg: "Would you ever push the nuclear button if you were Prime Minister?"

Jeremy Corbyn: "I am opposed to nuclear weapons ... They are the ultimate weapon of mass destruction that can only kill millions of civilians if ever used ... Listen. The nuclear weapons that the United States holds - all the hundreds if not thousands of warheads they've got - were no help to them on 9/11. The issues are threats of irrational acts by individuals ..."

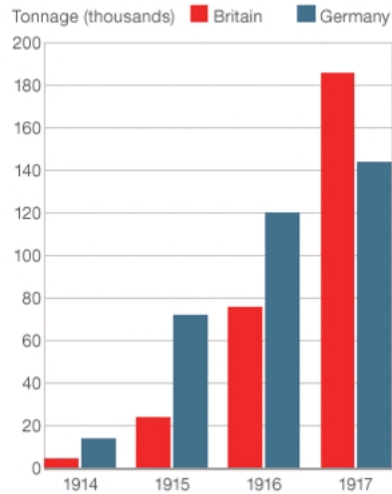
On the topic of irrational acts by individuals, what if President Putin (who immediately after Corbyn's interview started bombing the enemies of his friend Assad the butcher in Syria), goes totally crazy?

Remember that the ratio of nuclear weapons to conventional weapons casualties during the 46 year Cold War was 0, because the prime *use* of nuclear weapons was to deter an invasion of Western Europe by Russia, and no invasion occurred despite the failure to use nuclear weapons elsewhere to deter or end wars in Korea, Vietnam, and Afghanistan during the 1980s. The anti-nuclear myth is that fighting with conventional weapons that don't deter wars is a more humane option than ending war using credible nuclear deterrence.

In **WWI**, Britain's fired 170 million shells at German trenches, of which 1.5 million were fired in the brief barrage before the Battle of the Somme. In 1917 alone, Britain produced 50 million shells containing 185 kilotons of explosive. In the Battle of Amiens, August 1918, the firing of 4,000,000 allied shells broke down German positions. In a final push, devastation at a rate similar to nuclear war bombardment occurred when *943,947 shells were fired in a 24-hour period by the British Army on 28-29 September 1918, resulting in the Armistice ending the war on 11 August* (source: **Malcolm Pearce and Geoffrey Stewart, *British political history, 1867-2001*, page 296**). Altogether, from 1914-17 Britain fired 290 kilotons of high explosives in shells at German trenches:

Winning the war in the factories

British and German World War I explosive production



Source: Niall Ferguson, *The Pity of War*

The "equivalent megatonnage" or equivalent to 1 megaton nuclear weapons, isn't just 0.29 megatons, but is immense because the area of destruction and thus casualties scale by only about the 2/3 power of energy, not directly with yield, and each average shell contained only 3.7 kg of explosive. Thus, the equivalent megatonnage of Britain's shelling in 1917 alone is:

$50,000,000(3.7 \times 10^{-9})^{2/3} = 120$ separate 1 megaton nuclear weapons. In the whole of WWI, the British Army fired 170 million shells, with equivalent damage to:

$170,000,000(3.7 \times 10^{-9})^{2/3} = 408$ separate 1 megaton nuclear weapons.

(We can neglect the 50% blast partition of total yield in nuclear weapons, because that's *also true* for conventional explosive shells that are 50% explosive, 50% steel case by mass.)

Dr Ralph E. Lapp's 1965 book *The New Priesthood* (Harper, New York) on pages 113-114 gives an *honest* "equivalent megatonnage" comparison between conventional weapons and old high-yield megaton single warhead nuclear missiles (which have now been replaced with lower yield MIRV warheads) instead of following CND by claiming falsely that the *energy* equivalent of 1,000,000 tons of TNT kills the same number as a million separate tons of TNT in explosions of conventional weapons:

"A warhead for a Minuteman or Polaris missile costs about \$1 million each. ... To produce damage comparable to that from a one-megaton bomb, some 8,000 'old-fashioned' bombs each containing one ton of TNT would have to be dropped uniformly over the same target area."

In other words, according to Lapp: 8 kt of conventional weapons = 1 megaton. Using the two-thirds power of yield scaling, the equivalence is: 10 kt of small 1 ton TNT bombs = same area of damage as 1 megaton in a single bomb. The American B-52 bomber has a payload of 32 tons, so it takes 313 sorties to drop 10 kt of TNT which (if the bombs are 1 ton each) is equivalent in damage area to a 1 megaton nuclear weapon.

In Vietnam, 7,662,000 tons of conventional bombs were dropped (according to Micheal Clodfelter's *Vietnam in Military Statistics*, 1995, page 225), which by this reckoning (10 kt of conventional bombs = 1 megaton of nuclear) is equivalent in terms of damage to a nuclear war of 766 separate 1 megaton explosions.

If you're worried that we haven't included fallout, don't worry: we didn't include the 113,000 tons of gas used in WWI in that calculation. But seeing that gas wasn't used in WWII despite dire scare-mongering prior to the war - largely responsible for the appeasement policy that led to the war, according to Herman Kahn's analysis

- there's no particular reason why nuclear weapons will be used to maximise fallout by high yield ground bursts near cities, rather than air bursts. Likewise for the time-scale of the attack: in 1939 pundits were claiming that there would be an immediate all-out "knockout blow" lasting days, not six years of protracted war. As Kahn argued, even a dictator like Hitler didn't fight WWII in the wildly irrational way that the consensus of expert opinion in 1939 predicted. There's even less reason for a country to try to disarm itself by detonating every warhead it has within five minutes of a nuclear war starting.

Now consider WWII, where London alone received about 18.8 kilotons in roughly 188 thousand separate 100 kg explosives in the 1940 Blitz :

$188,000(10^{-7})^{2/3} = 4$ **thermonuclear weapons, each 1 megaton.**

The 1.3 megatons of conventional bombs dropped on Germany in WWII was likewise equivalent to:

$13,000,000(10^{-7})^{2/3} = 280$ **separate thermonuclear weapons, each 1 megaton.**

In total, 74.2 kilotons of conventional bombs were dropped on the UK in WWII causing 60,000 casualties, equivalent to 16 separate 1 megaton nuclear weapons, confirming the British Home Office analysis that - given WWI type civil defence - you get about 3,750 casualties for a one megaton nuclear weapon. Naturally, without civil defence, as in early WWI air bombing surprise attacks or the first use of nuclear weapons against Hiroshima and Nagasaki, casualty rates can be over 100 times higher than this. (For example, Glasstone and Dolan, in *The Effects of Nuclear Weapons*, 1977 point out that in Hiroshima the 50% lethal radius was only 0.12 mile for people under cover in concrete buildings, compared to 1.3 miles for those caught totally unprotected outdoors. The difference in areas is over a factor of 100, indicating that the casualties in Hiroshima could have been reduced enormously if the people had taken cover in concrete buildings, or simple earth covered WWII shelters which offered similar protection to concrete buildings.)

About ten percent of the conventional bombs failed to detonate, creating a massive bomb disposal problem that slowed down civil defence in WWII, where the protracted air raids over many months progressively reduced shelter utilization in London, increasing the casualty rate. In neither Britain nor Germany did the bombing of civilians lead to a clear defeat: the U.S. Strategic Bombing Survey found that generally the outrage over being bombed offset the depression of morale from the devastation. Strategic bombing of military manufacturing targets like ball bearing factories failed because the steel machine tools could easily withstand the blast and shrapnel. *Only the bombing of fuel and munition supplies* (both of which will destroy themselves easily, once ignited) *crucially helped to end the war: German production of aviation fuel fell from 156,000 tons in May 1944 to just 11,000 tons in January 1945, thus defeat.* The point is:

Conventional weapons failed to deter two world wars, which were each the size of a substantial nuclear war (in terms of devastation and overall casualties). Disarmament after WWI led to WWII.

That's what you get when you don't even have a nuclear deterrent. However, I don't see why we have to have the extremely expensive (£100 billion for a set of four) strategic nuclear Trident SLBM system. Why not simply put some tactical (enhanced neutron) nuclear warheads on cruise missiles on our **Astute class submarines (which now cost us only £747 million each)** to deter Putin from sending massed tank invasions into Europe? Then if Mr Corbyn has to press the button, he can rest assured that the 1 kiloton yield nuclear weapons at 500 m burst altitude over Mr Putin's tank column as it heads over a border will not cause any harm to civilians. Sure, some cruise missiles might be shot down, but since Moscow has ABM, some Trident warheads will likewise be shot down.

Jeremy Corbyn should however be congratulated for correctly heading his own website's absurd anti-civil defence rant "Nuclear Madness". It *is* nuclear madness.

<http://jeremycorbyn.org.uk/articles/nuclear-madness/>

Nuclear madness

"... The ludicrous Government publication *Protect and Survive* which the Thatcher administration produced as a cover to further proliferation was met with derision. Hiding under a stout table with a few bottles of water, having just white washed the windows, hardly seemed a reasonable response to a nuclear threat. Edward Thompson's brilliant riposte *Protest and Survive* was a factor in the huge pan European anti nuclear movement of the early 1980s. ..."

What Jeremy (and his anti-nuclear ranting friends like Duncan Campbell) needs to remember is, **as we proved statistically in a previous post, simply "hiding**

under a stout table" saved 97.5% of lives in completely collapsed homes in World War II, and modern concrete city buildings with simple fire bucket countermeasures worked to save lives within the firestorm area near ground zero in Hiroshima, and simple civil defence Anderson shelters, trench shelters, and concrete buildings to deflect blast and absorb thermal and nuclear radiation were proved at nuclear tests such as Britain's first test, **Operation Hurricane, Monte Bello, 1952**. I agree that the reports should have been published to defend civil defence against Duncan Campbell and CND's ranks, but we all know that UK Government is a patronising, secretive, and over-simplifying group of bureaucrats (that doesn't disprove the scientific evidence). Corbyn's exaggerated nuclear threat and ignorant hatred/"ridicule" of civil defense is a contrived populist myth, based on covering up the credible military capabilities of tactical nuclear weapons to *deter* invasions. **It is nuclear madness, not sanity.**

ANOTHER LOOK AT THE REASONS WE HAVE A NUCLEAR DETERRENT AND NEED CIVIL DEFENCE TO MAKE IT CREDIBLE TO END WAR AND SUFFERING TODAY

(OR, WHY JEREMY CORBYN SHOULD LEARN TO STOP WORRYING ABOUT THE NUCLEAR SCARE STORIES, AND LOVE THE FACT THAT NUCLEAR WEAPONS HAVE ENFORCED AN END TO WORLD WAR SINCE 1945, AND CAN DETER INVASIONS TOO)

Let's do a full analysis of the key points Herman Kahn makes about nuclear deterrence and civil defence in his badly misrepresented 1960 *On Thermonuclear War*, which contains many important points but is poorly organized. It is composed of lightly edited lectures, first delivered at Princeton University in March 1959, but sadly omits some key arguments that Kahn made in his lengthy 26 June 1959 testimony to the U.S. Congressional Hearings before the Joint Committee on Atomic Energy, ***Biological and Environmental Effects of Nuclear War***. I first read *On Themonuclear War* twenty five years ago after reading James R. Newman's provocative (sneering and ignorant) attack on it in the March 1961 *Scientific American* (which was on the shelf in the university library), while I was a physics undergraduate.

The objective approach to resolve any "controversy" by debunking myths using relevant facts:

- 1. Search for "sacred cows" that are irrationally defended and protected from objective criticism. Slay them, since they are proof of a lack of evidence based objectivity in mainstream dogma.*
- 2. Play devil's advocate politely but objectively, to unearth and expose deep rooted prejudices and biases.*
- 3. Break key taboos by introducing heresies that are factually defensible but which produce irrational "let's close this debate now" style censorship from the dogmatic status quo, not objective discussion.*
- 4. Use evidence of paranoid censorship as proof that you have won the argument because you have exposed irrational bigotry over the key facts that underpin the mainstream arguments.*

THE FAILURES OF DEMOCRACIES IN DEALING WITH DICTATORS

Kahn's basic objective which he should have put on page 1 but didn't is to be found in Appendix I, *Improve Policy Formulation*, to *On Thermonuclear War*, pages 579-8. There, Kahn starts with a quotation from volume 1 of Alexis de Tocqueville's 1835 *Democracy in America*:

"Foreign politics demand scarcely any of those qualities which are peculiar to a democracy; they require, on the contrary, the perfect use of almost all those in which it is deficient. ... a democracy ... cannot combine its measures with secrecy [going to the United Nations for authority to use force against terrorists is contrary to surprise tactics that bring success, by catching opponents off guard] or await their consequences with patience [democracy blinked first in Vietnam, where the Thomas Schelling *Strategy of Conflict* approach hardened the enemy morale, while undermining the morale of the democracy]. These are ... precisely the qualities by which a nation, like an individual, attains a dominant position. ... Almost all the nations that have exercised a powerful influence ... have been governed by aristocratic institutions. ... nothing in the world is so conservative ... The mass of the people may be led astray by ignorance or passion ..."

Democracy has all the weaknesses of the mob, which explains the routine failures of democracy to avoid costly wars, and also the weaknesses of democracy during war. Herman Kahn explains on page 580 of *On Thermonuclear War*:

"I chose to quote from de Tocqueville at length because I believe he describes the core of our problem as well as anybody has. It is very difficult to believe that we can muddle through ... in the characteristic fashion of a democracy."

THE REAL EQUIVALENCE OF NUCLEAR WEAPONS TO CONVENTIONAL WARS

The next thing Kahn should have done on page 1 is to review the lessons of historical wars, which he defers to Lecture III, beginning on page 311. James R. Newman and other "critical" reviewers ignored this material, taking offence with the some of the relatively poor presentation in the earlier chapters. For example, Newman attacked Kahn table of casualties versus recovery times for different sizes of wars, which Kahn labelled "provocatively" with the rhetorical question: "Will the survivors envy the dead?" It was a poorly thought out idea. What Kahn should have done was probably to have stuck to actual historical wars in the table, listing the total linear megatonnage, the equivalent nuclear megatonnage (based on damage area scaling, as we showed earlier in this post), as well as the casualties and economic recovery times, labelling the table: "Few survivors envy the dead." In particular, some examples of counterforce wars that did not involve city bombing should have been included (like World War I), to make the wide range of possibilities clearer, and to prove that conventional war is not preferable to credible tactical nuclear deterrence.

NUCLEAR PROLIFERATION OF A CREDIBLE, PROTECTED SECOND-STRIKE CAPABILITY COULD DETER VIOLENCE, THEREFORE CAUSING WORLD PEACE

Kahn argues on pages 491-2 of *On Thermonuclear War* that credible nuclear weapons in the Middle East to deter conventional wars there, saving lives, will possibly convert routine violence into a more stable peace:

"We may be too frightened of the possible consequences of the widespread diffusion of weapons. It is quite possible that if one gave the Egyptians and Israelis atomic weapons, one is likely to find both nations acting much more cautiously than they do today, simply because the consequences of 'irresponsibility' are so much more disastrous. ... In addition, a war between Israel and Egypt would not be a world disaster but a local disaster ... Almost any sober analysis indicates that it is somewhat harder for Nth countries to cause a cataclysm than is often believed. ... It is even difficult to imagine one of these nations being able to start an accidental war ... in some kind of a crisis that could be helped by such an action ... the Soviets and the United States would be likely to be on their guard."

On page 525, Kahn explains accidental wars are only found to escalate uncontrollably *when defensive preparations against such contingencies are absent or highly defective, when both sides are trigger-happy, paranoid, and are on the threshold of mutual annihilation* (instead of deterring escalation):

"... the Camlan problem - the possibility that a war will be touched off by an accident or misunderstanding. ... Camlan refers, of course, to the last battle of King Arthur. ... Both sides were fully armed and desperately suspicious that the other side was going to try some ruse ... one of the knights was stung by an asp and drew his sword to kill the reptile. The others saw the sword being drawn ... A tremendous slaughter ensued."

This failure of trigger-happy *first strike capability* is precisely why we have a *protected second-strike capability*, so we wait for the enemy to actually blow us up, before Trident "retaliates". We don't launch on warning, in case the warning system makes a mistake (a flock of birds on a radar screen, a missile test, etc.).

Kahn adds: "The chronicle *Morte d' Arthur* is quite specific about the point that the slaughter was excessive chiefly because the battle took place without preparations or premeditation."

WHY DETERRENCE IS INVULNERABLE TO TRIGGER-HAPPY ESCALATION "RISKS"

Since we have a protected second-strike nuclear deterrent, with ICBMs in nuclear weapon effects-resistant trench type silos, or SLBMs and cruise missiles hidden at sea in nuclear submarines, we don't to be trigger-happy and rush into a full scale retaliation as soon as an enemy accidentally launches a single missile. We can await the outcome, and proceed cautiously. The usual picture of rapid escalation in nuclear war is debunked by the existence of protected retaliation capabilities, that make sure we don't have to rush into escalating a accident into a full scale thermonuclear war.

Kahn finds that *most cases in history where escalation did occur* are therefore irrelevant to the situation existing now, where the nuclear deterrent we have developed is specifically designed to not be trigger-sensitive. All of the other "accidental wars" actually fall into the category of "contrived accidents", where relatively minor incidents or accidents are seized on and deliberately exploited as an *ad hoc* excuse to "justify" a pre-planned agenda, which would otherwise be very hard to defend at that time. For example, Hitler used the Reichstag Fire incident in 1934 as an excuse to declare a state of emergency and turn the democracy into a dictatorship. In another example, the Spanish-American war of 1898 was triggered off by the sinking of the American battleship *Maine* off Havana, Cuba, by a Spanish mine. Some critics claim that this was contrived by America as an excuse to have a war with Spain, just as the Reichstag Fire was alleged to have been started off by Nazis. Regardless of who was responsible in either case, the point is that the accidents or crises were exploited and escalated by a trigger-happy agenda to justify aggression. Our nuclear deterrence is deliberately designed to avoid rapid escalation to war, triggered by crisis or accident.

LESSONS FROM THE INERTIA OF MOBILIZATION BUREAUCRACY PRIOR WWI, AND FROM DISARMAMENT DUE TO WAR EFFECTS EXAGGERATIONS PRIOR TO WWII

"I do claim that the problems with which the major European powers contend may arise again in some modified form - particularly if we do not make preparations to prevent this from happening." - Kahn, *On Thermonuclear War*, page 416.

Before WWI, there was a dangerous trigger-happy deterrence in Europe, based on immense stockpiles of bulky conventional weapons and the conscription of millions into massive armies prior to the declaration of war. The problem was, as Herman Kahn explains, that this conventional arms involved a heavy militarization of society, right down to the printing of railway timetables to transport troops to borders in the event of a crisis. All conventional weapons are relatively bulky compared to the equivalent megatonnage in nuclear warheads, so **all conventional weapons carry - in some degree or other - the same general problems of highly visible mobilization in an effort to defend frontiers, as those which led to rapid escalation and war in August 1914, since the highly visible deployment of immense, credible conventional arms in a crisis situation itself becomes seen by potential adversaries as tantamount to a provocative act of aggression.** In 1960, Britain ended conscription (National Service), thanks to reliance of credible nuclear deterrence. Many countries in the world that rely on conscription and conventional arms instead of credible nuclear deterrence have had major wars since then.

Lecture I of Kahn's *On Thermonuclear War* is very badly organized with no clear narrative, allowing critics to pick bits out of the weakly-defined context to sneer at, but in a nutshell Kahn argues that most mainstream media dialogue on nuclear war is bogus because it is biased in favour of nuclear disarmament and/or world government, and with that agenda it too readily accepts massive exaggerations of not only the effects of nuclear war, but also the rate of escalation and loss of control that occurs.

The problem with world government is basically that it is sophistry, just a case of remaking "wars" as "civil wars" or "rebellions", and in history we see the failure of the kind of groupthink that results from the loss of autonomy when diversity and freedom was suppressed using aggressive tactics by the Soviet Union's dictators, the Nazis, Prussian Empire, Roman Empire, European Union, British Empire, (non)United Nations, etc. Those who hate meaningful democracy and want to give up freedom for the sake of big government bureaucracy always sell it with peace propaganda, and it always creates war. The push of the European Union towards Ukraine by the European Union's unelected former anti-neutron bomb CND fanatic baroness Cathy Ashton has killed many thousands of innocent civilians, and the annexation of Crimea by Russia. **The (non)United Nations has failed to send peacekeepers into Syria because pro-Assad Russia has vetoed such peacekeeping, resulting in more deaths occurred in Hiroshima.** The 1930s League of Nations failed likewise to resolve the Spanish Civil War, or to prevent Germany rearming prior to WWII. As Clausewitz stated, war is born of politics. Put another way, if you want peace, don't try dialogue to resolve a controversy, because actions speak louder than words and wars are therefore the products of intractable arguments.

Herman Kahn's Table 1, page 4 of *On Thermonuclear War*, lists the usual array of failed utopian "Alternative National Postures" ranging from "International Police Force plus World Government" to "Dreams". It's probably what gave Kahn such a bad press, because lawyers like Kahn's reviewer James R Newman can be biased in favour of some kind of legalistic or police solution to war. James R. Newman drafted the disastrous 1946 Atomic Energy Act for Senator McMahon, which made nuclear energy an American state secret and thus broke the wartime Roosevelt-Churchill agreement for postwar collaboration on nuclear science. Newman's Atomic Energy Act held up progress because, as a mere piece of paper didn't stop Russian spies, but it did stop allies, so Russia ended up with more nuclear secrets than Britain.

Kahn argues on page 6 that the 1958 book, *World Peace Through World Law*, by Grenville Clark and Louis B. Sohn, leads to regional autonomy problems: "the underdeveloped nations are going to resent any real or fancied hindrances". The conditions throughout the world are naturally unequal to begin with, due to climatic variations (needs for air conditioning or heating fuel), varying local resources (energy fuels, mineral resources, agriculture, recreation, ethnic traditions, ease and cost of transportation) so some regions need different rules to compensate for differences, and this then causes complaints from others about "inequality", or it creates excessive migration and overpopulation in some areas, until either the central government eventually collapses like the Soviet Union or Roman Empire, or else is overthrown by coup d'etat or **civil war, which in a world government is equivalent to world war.**

(We already see some of these problems on a smaller scale in say the European Union, which is being forced to give repeated bail outs to extravagant, debt ridden states like Greece, in order to maintain political "unity". UK, where Wales, Scotland and Northern Ireland have regional parliaments, creating differences in health care policy in different regions, and endless complaints some medicines being unavailable in certain areas where the authority has decided on a different spending priority to elsewhere, creating "postcode lottery" unequal, luck-based social system. This complaint is the exact opposite of the original motivation for autonomy, decentralizing power to lower levels, to give them the freedom to form their own policies.)

HOW EXAGGERATIONS OF WAR EFFECTS LED TO APPEASEMENT AND WWII

One of the worst errors Kahn makes in *On Thermonuclear War* is to fragment his arguments on the dangers from the exaggeration of nuclear war, preventing a compelling narrative discussion of the evidence that nuclear war exaggerations are analogous to the 1930s gas, high explosive, and incendiary firestorm, and "knockout blow" exaggerations by the massive media hyped united peace/disarmament/appeasement/pro-Nazi/anti-Jew propaganda lobby, led by popular figureheads such as Professor Cyril Joad, author of the 1939 *Why War*, which tried to ridicule Winston Churchill by pointing out that, prior to WWI, he watched Churchill's lecture call for an intense arms race to deter the German Kaiser being ridiculed by anti-war *The Great Illusion* author Sir Norman Angell. Angell simply asked Churchill,

... rhetorically, if he would also give his advice to Germany? Angell's argument was that modern civilization cannot afford war because war involves only financial losses, and even a country invades and annexes another, the costs of providing for that additional country will cancel out any gains. Angell's simplistic argument ignored exploitation and slavery.

It turned out that all of the situations where Angell's anti-war economics argument holds are where both sides are well-established democracies, which never have wars anyway, as proved by the statistics in Dr Spencer R. Weart's *Never at War: Why Democracies will NOT fight one another*.

So Angell's argument *fails to apply to the entire class of situations where wars can occur, where one side is not a well established democracy*. Furthermore, not only does Angell's argument absurdly fail to apply to the very situation (war) that is supposed to be about, his basic thesis is also totally inverted from the real world facts. Instead of Angell's fears of economic ruin helping to deter WWII, fears of economic ruin motivated the socialist state dictators to launch their invasions, Italy in Ethiopia and Germany in Europe. They invaded to seize resources. Angell's simplistic economic ideas at best only applied to democratic states behaving fairly, and were totally misleading for the case of dictatorial states with large budget deficits. Such dictators did not worry about recompensing annexed countries according to Angell's formula. It was taboo for "warmongers" like Churchill to argue with Angell, just as it is taboo to argue with a religious leader over the evidence for the dogma, and this situation catered to the popular appetite for peace following WWI. He was awarded the Nobel Peace Prize and a knighthood for a contrived dismissal of Churchill's argument.

Kahn on page 9 states that in the era of secrecy over widespread H bomb effects following the 1 March 1954 fallout accident in the Pacific (where fallout from the 15 megaton Castle-Bravo bomb contaminated the skin and water of outdoor Marshallese islanders and Japanese tuna trawler personnel), the Mainau Declaration was issued by a lot more Nobel Laureates:

"In 1955, fifty-two Nobel Laureates signed a statement (the Mainau Declaration) which included the following: '*All nations must come to the decision to renounce force as a final resort to policy. If they are not prepared to do this they will cease to exist*'."

Kahn adds, on the same page, that this simplistic stance was echoed by: "Neville Shute's interesting but badly researched book *On the Beach*, which presumes and describes the total extinction of humanity as a result of ... radioactivity coming from a thermonuclear war."

Where I disagree is that he then fails to address - on page 9 at that point in the opening of his book - the 1930s exaggerations of a similar sort which led to repeated peace handshakes between Hitler and British Prime Minister Chamberlain, and the world war. Instead, Kahn defers that until page 375 and thereafter, and gives a more fragmentary discussion in his 1960 book than his more impressive, harder hitting testimony on peace propaganda weapons effects exaggerations in his 26 June 1959 testimony to the Congressional Hearings on the *Biological and Environmental Effects of Nuclear War*. Instead of displaying the awful consequences of war exaggerations in the 1930s, Kahn chooses to launch into an interesting but lengthy discussion of some simple countermeasures against strontium-90 fallout in food after a nuclear war. This has doesn't address Shute's cobalt-60 fallout poisoning scares in *On the Beach*, and we see the same kind of bad response to cobalt-60 fallout fears in Cresson Kearny's *Nuclear War Survival Skills*, where Kearny raises the question of Shute's cobalt-60 fallout scare mongering, but tries to answer it by discussion the decay of fission product fallout (not the specific cobalt-60 issue that often arises from people who read the Shute book or the film of the novel).

The simple answer is that even with 100% capture efficiency, it takes at least one neutron to convert an atom of cobalt-59 into cobalt-60 and its emission of two gamma rays totalling 2.5 MeV (mean energy 1.25 MeV) is spread out at a low dose rate due to with its half life of over 5 years (allowing time for decontamination before receiving a large dose), but if you use a U-238 jacket on the bomb, you get about 200 MeV of energy for each high energy neutron fission, including more residual radioactivity than cobalt-60 gives, and at a higher initial dose rate that creates more casualties. In other words, a thermonuclear weapon with a natural uranium jacket creates the largest fallout hazard, and a cobalt jacket actually reduces the hazard. In addition, cobalt is refractory (cobalt melts at 1,495 C), so much of it ends up concentrated on large fallout particles, or small pellets, mostly deposited near ground zero, as proved at a British nuclear test of Operation Antler, in Maralinga, 1957. By contrast, many important fission products, including iodine, strontium and cesium, end up dispersed over much larger areas since they are either volatile themselves (like iodine) or else have gaseous precursors that don't allow them to condense on to large particles in the fireball, before those particles are quickly removed by gravity. Thus, due to chemical fractionation, a much larger fraction of the fission product activity ends up in global fallout, being deposited with rain in distant thunderstorms, than is the case for cobalt-60. Thus, you can't enhance the fallout hazard simply in the way Shute imagined in his novel.

Some anti-nuclear scaremongering in the 70s and 80s recognised this and attempted to use another argument, exaggerating long-lived fallout dangers in computer models assuming that a deliberately ground burst nuclear weapon on a nuclear reactor or nuclear waste plant would convert 100% of the radioactivity encountered into fallout. This is extremely naive, because we know from determinations of the specific activity of surface burst nuclear test fallout that only about 1% of the mass of the crater actually becomes fallout. Moreover, although you get large craters in dry sand, the nuclear reactor core and fuel elements are encased in tough concrete, similar to hard rock, which shield neutrons (which might naively be expected to overheat a nuclear reactor) and are resistant to the high overpressures and fireball heat. It would be more predictable for an enemy to try a nerve gas attack or even a conventional bombing of a city.

On pages 23-72 of *On Thermonuclear War*, Kahn debunks a claim made the March 1959 Congressional Hearings on military preparedness in the Berlin crisis, that

long-term fallout hazards from food contaminated by strontium-90 and carbon-14 would "ruin" farmland for "40 years". Kahn remarks sensibly on page 24 that "those waging a modern war are going to be as much concerned with bone cancer, leukemia and genetic malformations as they are with the range of a B-52 ..." before giving a long-winded debunking of those risks.

On page 46 Kahn argues by neglecting apoptosis and DNA repair due to P53 and other natural anti-radiation mechanisms that operated in Hiroshima, that even in the worst assumption a mean 250 R fallout dose to each survivor will increase the risk of a major genetic defect from the natural 4% by just 1% to a nuclear war result of 5%, debunking also on page 48 that J. B. S. Haldane's 1931 theory that minor defects to "future generations" are a *real* risk. Firstly, if someone is killed by a bullet, mathematically you can *also* argue that an infinite number of possible future descendants have been wiped out of existence, but that's just sophistry.

Secondly, small genetic defects at least allow a possibility of a descendent: if all the future deaths occur in the first generation, the total number of descendants are *minimised*, so you *gain* from spreading out genetic damage in time, because it becomes more tolerable and survivable (the opposite of Haldane's flawed idea).

On page 65, Kahn notes that although the peacetime ICRP strontium-90 bone dose limit was then 67 strontium units (SUs), bone cancers have only been observed to occur (e.g. in the radium dial painters) above a threshold "equivalent of 20,000 to 30,000 strontium units". One million square miles was then used for growing crops in America, and Kahn estimated that just 13 megatons of fission fallout spread uniformly over it would result in the peacetime limit of 67 SUs. However, in reality the fallout is deposited in a non-uniform pattern with little upwind, so by increasing peacetime standards and by grading the food by strontium content, the contaminated food crisis can be averted without any significant bone cancer risks (in table 13, Kahn recommends that food with under 200 SUs is fed to kids, while that with over 25,000 is fed to adult animals which are soon to be consumed, where the strontium-90 will enter the inedible bone, not the meat). In table 15, Kahn finds that even a *large nuclear war* will not produce a carbon-14 dose of over 5 R/year.

Of more importance are the gamma radiation fallout doses. In table 8, Kahn defines a smaller (1,500 fission megatons) and a larger nuclear attack (20,000 fission megatons), giving the computed fallout distributions over North America in tables 23 and 24, respectively. For the smaller nuclear attack of 1,500 megatons, Kahn shows in table 23 that the outdoor gamma dose in the first 48 hours (during which the majority of the dose is received) is less than 6,000 R over 99% of the area of North America, requiring easily improvised shelter (basements, concrete/brick building ground floors with windows blocked, or simple tornado shelters) with a protective factor of no more than 40. For the 20,000 fission megaton attack, table 24 shows that 50% of North America gets that dose, requiring better shelters to avoid radiation sickness. However, as Kahn argues, there is no strategic threat of such a large attack of local-fallout creating ground bursts. For the smaller attack, evacuation of the most heavily contaminated hotspots is feasible. **"Z Zone" downwind heavy fallout areas, with outdoor dose rates in excess of 1,000 R/hour at 1 hour after burst, were simply scheduled for evacuation at 48 hours after burst by the British Civil Defence Corp in the 1960s.**

The absurdity of fallout scaremongering calculations by idealists, neo-Marxists, and also openly pro-Soviet Union politically biased fanatics also lies in the strategic assumptions, in which not only is the "knockout blow" delusion (which preceded both WWI and WWII) maintained, but civil defence evacuation, sheltering, and decontamination are neglected or downplayed, because of a bias about any nuclear explosion escalating uncontrollably and irrationally to complete stockpile use against civilian targets, in fear of surprise first-strike:

"The Nobel Laureates who authored the 'cease to exist' statement probably ... would be willing to go before a technical audience with a defense of the 'end of history' position as a sober estimate ... there are 'experts' who believe in world annihilation ... vehemently [Linus Pauling and fellow folk] ... sober study shows that *the limits on the magnitude ... seem to be closely dependent on what kinds of preparations have been made, and on how the war is started and fought*. While the notions ... may strike some readers as being obvious, I must repeat that they are by no means so. The very existence of the irreconcilable group predicting total catastrophe is proof."

- Herman Kahn, *On Thermonuclear War*, pages 10-11.

Kahn comments naively on page 286: "It is particularly hard to understand why this is so when almost all who write on this subject were adults during the later part of the Hitler era ... with the record of the 1930's plainly before us, we should all be able to realize ... the capabilities for such blackmail ..."

The exaggeration of gas/aerial explosive bombing/incendiary war effects was rife in the media in the 1930's for the same reason as the nuclear threat, and the real capabilities of conventional and nuclear are similar, since as we have shown above, Hitler's 188,000 bombs which were dropped on London in 1940 caused damage equivalent (using valid scaling laws) to four 1-megaton nuclear air bursts. The evacuation of children from London in Operation Pied Piper before war was declared in September 1939, as well as shelter provisions, made that nuclear-war-magnitude Blitz survivable and indeed preferable to surrender or collaboration, which Hitler called for "in the name of sanity". At that time, in 1940, there were pacifists calling for surrender, but after the war began, the more belligerent pacifists lost popular appeal because they were increasing perceived as enemy sympathisers, fellow travellers, and defeatists. In effect, the mainstream media quickly switched into an anti-appeasement mode once the war started, far too late to deter the war.

Kahn on page 286 argues that any political declaration that a real threat is "unthinkable" acts as a magnet for coercive thugs to do precisely that "unthinkable" act in an effort to *call the bluff of the democracy*:

"It would be disastrous to have a conspicuous gap in the spectrum of deterrents and capabilities. For example, when President Eisenhower remarked at a press conference that it was unthinkable that he would call out federal troops to enforce federal law in the Southern states, some Southerners immediately did something to make it thinkable. Something similar may happen if he convinces the Soviets that he means what he says when he says that 'war is preposterous'."

Kahn is often attacked for correctly having drawn attention to failures in the spectrum of deterrents. E.g., Fred Kaplan's book *Wizards of Armageddon* attacks warnings of a "missile gap" after the first satellite, Sputnik, was launched by Russia in October 1957, which seemed to prove their earlier August 1957 claim to have developed ICBMs. However, Kahn demonstrates on that the *risk* of a missile gap was a *real possibility* in his figure 3, "Could the missile gap have been dangerous?", which shows that *if* Russia had 150 ICBMs each with 50% reliability in 1957, it would have had better than 50% probability of destroying the entire 25 Strategic Air Command nuclear bomber bases in America, *preventing American retaliation*. This risk could therefore tempt enemy into launching a Pearl Harbor type surprise attack in a crisis situation.

After Kahn's book was published, U2 spy plane data was disclosed by President Kennedy, finally indicating that at no time did Russia have sufficient ICBMs to do that. *But until then, it was a risk that American planners needed to take seriously, because having a nuclear "deterrent" that is vulnerable to being wiped out in a surprise attack is not a deterrent, but a magnet for crisis instability*. Similarly, there was a risk that if we rely for deterrence on the threat to destroy Moscow, in a crisis the city simply could be evacuated. The existence of civil defence therefore has an effect on the credibility of nuclear deterrence in extreme crisis situations, precisely the situations where the war risks are greatest and deterrence is most important. This is the fact that Fred **Kaplan (and others) tried to ignore in their specious, simplistic Cold War attacks on civil defence plans by stating that in peacetime such plans exist "largely on paper" (like the plans for the British 1939 Operation Pied Piper prior to the declaration of war on Germany - the evacuation of kids from London to deter a knockout blow and to mitigate the effects if it did occur).** (See also **more specious anti-civil defense propaganda from Kaplan in part 2 of his 1978 *Bulletin* rant that simply ignores all the detailed nuclear test data proving civil defense.**)

What the anti-nuclear, anti-civil defense propaganda of (non)United Nations people like Ward tries to do is firstly to restrict the scope of nuclear deterrence to only extreme all-out nuclear attacks, **rather than the deterrence of conventional tank invasions by tactical Mk 54 and W79 warheads as in the 1960's under Kennedy and the 1980's under Reagan**, and then to claim that because they have restricted nuclear deterrence to World Wars that have not occurred since 1945 for some (conveniently unspecified) reason, nuclear weapons are obsolete and are only needed to deter other nuclear weapons.

That's a false argument because the reason nuclear weapons have not "been needed" to deter World War since 1945 is that they *have* been used successfully for precisely that purpose! You don't need to actually explode your entire stockpile to "use" nuclear weapons to deter world war, any more than you have to burn your house down to get "peace of mind" from paying for home fire insurance that includes smoke detectors to reduce fire risks. The specious argument that people lose out on a disaster insurance policy if it helps to avert a disaster is silly. This is why nuclear war scale-of-attack and destructive exaggerations are used: they are designed to paralyse the faculties, preventing objective discussions and making the relevant facts taboo.

Nuclear deterrence needs low yield tactical warheads to deter major provocations such as conventional invasions and wars by the enemy, which otherwise end up causing more casualties than a nuclear war would:

"In spite of (or possibly because of) the many words that are lavished ... most discussions of the conditions needed for such [all out war] deterrence tend to be unrealistic. They rely more on assumption and wishful thinking than analysis. Typically, discussions of the capability of the United States to deter a direct attack compare the preattack inventory of our forces with the preattack inventory of the Soviet forces ... This is a World War I and World War II approach. It can look very impressive in the columns of the Sunday newspaper or speeches ..."

- Herman Kahn, *On Thernuclear War*, pages 127-8.

In fact, the *total size* of nuclear stockpiles are irrelevant to *most* war scenarios, the exception being the all-out surprise attack with with all-out instant full retaliation, where both sides completely disarm themselves in a **single afternoon by fully expending all their weapons, as in President Carter's much quoted January 1981 farewell address which seemed to predict that President Reagan would destroy the world by accident.**

Take an error made by Professor Hans A. Bethe in his April 1982 presentation to the Americal Physical Society, *We are not inferior to the Soviets* (published in Bethe's 1991 book, *The Road from Los Alamos*, pages 90-98). Bethe claims falsely that although in 1982 the Soviets had *twice the equivalent megatonnage* of the United States: "The Soviets have put larger-yield weapons on their missiles, an advantages that is cancelled out by the lower accuracy of their missiles."

This is false because you don't need high missile accuracy if you are using high yield warheads on cities. Even an error of a mile or two for a city the size of London has relatively little effect on the damage. Where missile accuracy is crucial is for hitting missile silos where very high overpressure or cratering action is needed. A dictatorship can credibly deter a democracy with less accurate missiles than a democracy needs, since the democracy is more concerned about protecting the people

from retaliation than the dictatorship. (The Hitler "bunker mentality".)

Bethe's error is *in assuming a moral equivalence in the strategy of each side*, exactly the same error that *Great Illusion* author Normal Angell made when he ridiculed Winston Churchill's lecture on peacekeeping by deterrence prior to WWI (as quoted by Cyril Joad who attended and was won over by Angell, in Joad's pre-WWII appeasement book *Why War?*).

Bethe also falsely claims in his ignorant article that the neutron bomb to deter masses tank invasions is unnecessary if you have over 10 hand held anti-tank rockets per Russian tank. The problem is that Russia knows all about your anti-tank rockets which are most effective used against isolated tanks: because a barrage of fire from a mass of enemy tanks *very* soon knocks out the brave guys with the anti-tank rockets on their shoulders. This is precisely why you also need to neutron bomb, in order to deter attacks by forcing the enemy to disperse tanks, thereby making handheld anti-tank rockets effective. Additionally, Bethe quotes Brezhnev propaganda speech which claims that there are no winners in nuclear war: "I am quoting Brezhnev to counter the claim by some influential people in the U.S. Government that the Russians consider nuclear war winnable."

Bethe forgets that Hitler made repeated "peace plan" speeches for propaganda, but that didn't prove that Hitler was a man of peace. **On 17 May 1933, Hitler declared:**

"Germany will be perfectly ready to disband her entire military establishment and destroy the small amount of arms remaining to her, if the neighboring countries will do the same thing with equal thoroughness. ... Germany is entirely ready to renounce aggressive weapons of every sort if the armed nations, on their part, will destroy their aggressive weapons within a specified period, and if their use is forbidden by an international convention.... Germany is at all times prepared to renounce offensive weapons if the rest of the world does the same. Germany is prepared to agree to any solemn pact of non-aggression because she does not think of attacking anybody but only of acquiring security."

The problem was, Germany was already secretly rearming. **Hitler persisted with peace propaganda, declaring on 21 May 1935:**

"The German Government is ready to take an active part in all efforts which may lead to a practical limitation of armaments. ... Just as the use of dum dum bullets was once forbidden and, on the whole, thereby prevented in practice, so the use of other definite arms should be forbidden and prevented. Here the German Government has in mind all those arms which bring death and destruction not so much to the fighting soldiers as to non-combatant women and children. ... it will agree to any international limitation or abolition of arms ..."

Daily Mirror

No. 11,181

ONE PENNY

Registered at the G.P.O. as a Newspaper.

WORLD'S SNUB FOR THE HITLER PLAN

BRITAIN: "No peace proposals are acceptable which do not free Europe from the menace of aggression. Something more than words will be required from Hitler to establish confidence."

FRANCE: "We must wage the war imposed on us until the victory which alone will permit the establishment in Europe of a regime of real justice and lasting peace."

UNITED STATES: "The peace offered was one of conquest... Hitler's speech was the plea of a guilty soul that recognises its own crime. Britain will go on."

THESE WERE THE ANSWERS THE GREAT DEMOCRACIES GAVE TO HITLER'S "PEACE" SPEECH. AND LAST NIGHT, ANGERED AT THE FAILURE TO IMPRESS THE WORLD, BERLIN OFFICIALS THREATENED: "THE FUEHRER HAS FOR THE LAST TIME ANNOUNCED READINESS TO TALK PEACE. IN LESS THAN A WEEK HE EXPECTS TO KNOW DEFINITELY WHAT HIS ADVERSARIES THINK ABOUT IT."

A statement on the authority of the Government gave Britain's first reaction. And for France, Premier Daladier declared his country's determination to fight for a genuine peace, free from the menace of aggression.

Finland Says No

FINLAND is standing firm against the demands of Russia.

Her President, M. Kallio (Rome Radio reports) has refused to follow the examples of Estonia and Latvia and negotiate a trade agreement.

Russia has replied that now she reserves the right to take "appropriate action."

Estonian Ports

In Moscow, the fact that Hitler made no reference to the possibility of Soviet aid in the European war was taken by observers as another indication of Russia's determination to remain neutral. It is understood that the Soviet Government was satisfied with the speech.

Early today, an Associated Press message from Berlin said that Hitler would accept an armistice if it were proposed by President Roosevelt or the head of any important neutral State, with a view to a European settlement.

'Peace Proposals Vague and Obscure'

Said the British reply: "The speech abounds in perversions of the truth which will be readily recognised by the people of this country, and indeed of the whole world."

"Herr Hitler's statement that he had never broken his promise only shows that words have for him a meaning totally different from that commonly attached to them."

This Regiment Wants Buttons

"Wanted urgently—Army badges and buttons." This appeal is issued by Lieut.-Col. Sir Ronald Ross, M.P., Officer Commanding the North Irish Horse, Northern Ireland's new volunteer light tank unit of the Royal Armoured Corps.

From 1934 to 1938 the North Irish Horse consisted of one man only—Sir Ronald. Now that the regiment is to be revived, there are not enough buttons and badges to go round.

General recruiting for the unit has not begun, but a few men have been specially enlisted and they are anxious to wear their badges.

The appeal states:—"Any such badges and buttons should be sent to: North Irish Horse Regimental Headquarters, Victoria Barracks, Belfast."

Another old-timer who has donned khaki again is Lieut.-Col. P. C. Anderson, who in 1918 commanded the Seventh Battalion of the Seaforth Highlanders. He has now joined up as a subaltern in the same battalion.

AFTER TODAY

WAR'S WAR, AND, WHILE GIVING ALL THE NEWS AND PICTURES, WE MUST DO OUR BEST TO CONSERVE PAPER. THAT'S OUR JOB. YOU, A READER OF THE "DAILY MIRROR," CAN

For pacifists desperately concerned with "educating the ignorant" that any war will end up with the complete annihilation of humanity amid clouds of poison gas, incendiary bomb firestorms and high explosives, such "peace propaganda" speeches by enemies are very soothing and appear to offer hope of a "peaceful resolution of differences". Continued diplomatic appeasement by morally weak, deluded democracies, meant a considerable saving ammunition by dictators for use against tough opponents. Similarly, efforts by the Russians to stir up anti-neutron bomb protests and "nuclear freeze" campaigns in the West suited their own agenda of coercing morally weak opponents into concessions and defeatist policies. So if you exaggerate nuclear war so much that it appears the biggest threat in the world, you have destroyed the credible nuclear deterrent completely. The same result occurs if you permit the free media to be saturated for decades with (to be frank) lying hogwash from incompetent, deluded, elitist egotists who nobody wants to debunk for fear the revenge retaliation attack!

DEBUNKING THE ARGUMENT THAT DISARMAMENT MAKES US SAFER

"Disarmament can also create pressures towards preventative war. ... Most writers ... focus all their attention on conditions at the moment the agreement was openly abrogated [in 1935 Hitler's air force was suddenly admitted by the British Government, which had previously denied and ridiculed Churchill's warnings; however the British Government only admitted the threat after it appeared *big enough to threaten a destructive war* if forcibly stopped, so there was never any period of an admitted "emerging threat" which could be stopped safely]. The arms controller should not advocate anything to decrease the possibility of the accidental and miscalculation wars, that so weakens us militarily that he had, inadvertently,

excessively increased the possibility of war by calculation."

- Herman Kahn, *On Thermonuclear War*, 1960, page 230.

Kahn's criticisms of disarmament begin with E. J. Gumbel's study of how 1920s disarmament effectively encouraged German violations and then coercion, sparking off world war two, *Disarmament and Clandestine Rearmament under the Weimar Republic* (published in the book *Inspection for Disarmament*, edited by Seymour Melman, Columbia University press, New York, 1958, pages 203-219). Disarmament helps law breakers; it doesn't protect you from a world war.

The point Kahn then makes is that larger stockpiles help to decrease the probability of war by enemy calculation, since they make it less certain the enemy could "win". If you have *general disarmament* to reduce risks of a large nuclear war occurring through an escalation after an accident or miscalculation (very unlikely if both sides have a protected second-strike nuclear deterrent), a dictator is more likely to believe he could "win" because the potential devastation is reduced, and therefore, you increase the risk of having a calculated nuclear war.

The whole reason for having a large nuclear stockpile is deter a calculated attack by an enemy, so if you disarm or reduce the stockpile "to make the world safer", you actually make the outcome of any attack less certain, and thus you increase the risk that a dictator will take a Russian roulette gamble that may cause a war. That war may then escalate into a world war, as occurred twice in the twentieth century. We could do deter with the same threat of devastation using immense conscription and a vast, more expensive stockpile of conventional weapons, but that increases the risk of accidental gunshots triggering war (prevented in nuclear weapons by technological safeguards).

HERMAN KAHN'S DETAILED ANALYSIS OF THE LESSONS OF WWI AND WWII

Cheap trenches used in the American Civil War to counter machine guns and mortars, preventing a knockout blow and forcing a protracted war of attrition, are ignored by Germany in 1914

"The mobilization is the declaration of war."

- General Boisdeffre, assistant chief, French General Staff, to Tsar Nicholas (quoted by Sidney B. Fay, *The Origins of the World War*, Macmillan, 1931, v2, p480).

This is often quoted as if to prove that war through accidental mobilizations was easy. But the opposite inference is that, as Tsar Nicholas was told by General Boisdeffre, everyone knew that mobilization was likely to lead to war, so countries only mobilized when they were prepared to go to war: war is *no accident*.

Both World War I and World War II arose in large part because of simplistic historical analyses that drew misleading "lessons" from the previous wars. In starting World War I by invading Belgium (which drew Britain to declare war due to the 1839 Treaty of London), Germany was applying the "lesson" it learned from its experiences of success when it quickly and efficiently ceased Alsace-Lorraine from the French in 1871. The problem was that between 1871 and 1914 the machine gun and high explosive shells had been developed and hyped (by both weapons manufacturers and pacifists like Norman Angell) as being spectacular, unanswerable, offensive "knockout blow" technology (akin to nuclear weapons today), which would overcome any opposition, annihilating any enemy forces instantly.

Such "knockout blow" technology had however been disproved in the trench warfare during the Siege of Petersburg, Virginia, which lasted from 9 June 1864 to 25 March 1865, near the end of the American Civil War. Machine guns and heavy mortars were easily held up by simple earth trenches, as predicted by Bloch (who was ignored by Germany). Germany in 1914 ignored lessons of the trenches in preventing a "knockout blow" and forcing a war to dragged out in attrition. The same error was again made in the 1930s, when the simple trench type shelters and gas masks of WWI were ignored by writers of next war fiction who assumed that obvious countermeasures would be neglected in the next war. Again, the same error was made during the Cold War, when America published pictures of houses blown up by 5 psi peak overpressure, but kept secret in *Capabilities of Nuclear Weapons* the fact that simple WWI or American Civil War type trenches exposed at early Nevada nuclear tests withstood 20 psi and shielded out most of the thermal and nuclear radiation, too. Instead, there is a repeated historical obsession with expensive, immobile concrete fortifications, the Maginot Line delusion:

"'Fine concrete', he kept on muttering ... they'll never get through this! ... We left the hot sun and went down into the Maginot Line ... we walked for a mile along a tunnel, meeting occasional soldiers on bicycles or an electric train bringing up ammunition ... The troops ate, slept and worked underground ... As I drank Pernod in the officers' mess, also underground, I said: 'It certainly seems impregnable'. 'It's impregnable all right,' they said. All the same there was one form of attack they were nervous about, and that was an attack by parachutists ... if anyone had suggested to the French military staff ... resolute Germans, dropped from the sky or infiltrating through under cover of the night, could put the guns of the Maginot Line out of action, he would have been ridiculed or arrested as a defeatist."

- Gordon Waterfield, *What Happened to France*, John Murray, London, 1940, pages 14-19. (Quoted by Herman Kahn, *On Thermonuclear War*, pages

Hitler found a way around the Maginot Line. The lesson drawn by historians and military strategists from WWI had been that some way had to be made to stop Germany invading France via Belgium in the precise way used in August 1914. France found a way to stop that threat. But by 1940, German tanks were capable of going through the rough terrain of the Ardennes Forest, and additionally German troop carriers were capable of flying over the Maginot Line to drop parachutists, despite the special anti-aircraft guns they had. In other words, it's very easy to draw misleading "lessons" from military history. Just as the German "lessons" of success from a fast surprise attack in 1871 were misleading in 1914, so the French "lessons" of invasion in 1914 were misleading by 1940. Historical analysis has itself caused complacency and tragedy, because learning from experience is fraught with problems when circumstances like technology change:

"Most of the [1914] experts argued that the Austro-Prussian war (seven weeks) or the first phase (five weeks) of the Franco-Prussian war would be the model of the future. ... that as soon as one side had been beaten in a significant battle, it would admit defeat. ... In particular, both military and political lessons of the American Civil War were ignored ... the Civil War, being a *civil* war, did not seem to be a good analogy to an international conflict between civilized nations. ... Both sides enormously underestimated the impact of the machine gun [for keeping troops heads down in trenches], barbed wire and trenches, and most important of all, the resilience and staying power of their soldiers and civilians ... to paint the enemy as inhuman and of making a total commitment to defeating him ... to justify past casualties and sacrifices and to preserve morale ..."

- Herman Kahn, *On Thermonuclear War*, pages 350-1.

Thus, the Germans put the Schlieffen Plan with its objective of knocking France out in six weeks (based on the war of 1870), into action in 1914, with tragic results for everyone once it degenerated into trench war. The main difficulty in learning the "lessons of history" is that history is like science, a poorly defined academic discipline with many definitions and arguments over its role. Some purist historians eschew the notion of trying to deduct any lessons from past events for current use, because even if past successes can be fully correlated with the circumstances that are associated with them (i.e. a perfectly complete historical record), that doesn't prove that circumstances actually *caused* the events (random chances are involved, too). Like an electron in the ground state of hydrogen, it may be impossible even in principle to make deterministic predictions. In addition, as Kahn remarks on page 354, "there are so many more ways to making mistakes than of being right." In other words, learning from experience is analytically a lot easier if that experience is a success, rather than a failure.

This is why exam successes are rewarded more than exam failures, and generally why success is held in greater esteem than failure, although it is popular to pass off failure as "experience". If you fail, you do not definitely know exactly how some of the many factors involved (from random bad luck to preparation and planning) should be changed in order to produce success. It is not even as simple as using a "fault finding tree", because often failure results from a combination of factors. If a car won't start and you find the battery is flat, that doesn't prove that charging the battery will cure the problem. The battery may be flat because of repeated efforts to start the car when the spark plugs are dirty; the gasoline tank is empty, the tyres are flat. In electronics, a typical fault like an failed capacitor dielectric or an overheated resistor may quickly cause a chain of other component failures, before the system shuts itself down. Merely finding a defecting component and replacing it is therefore not a cure: the fault almost immediately recurs. Failure is therefore very hard to rectify because there are a very large number of combinations of circumstances that cause it.

Success on the other hand is easier to learn from, because at least it proves that one combination of circumstances at a particular time *can* (with a probability which depend on the size of the role played by random chance, luck) lead to success. Nevertheless, military success can lead to the other side "learning its lesson" and taking defensive countermeasures to try to prevent a recurrence of that success by the enemy.

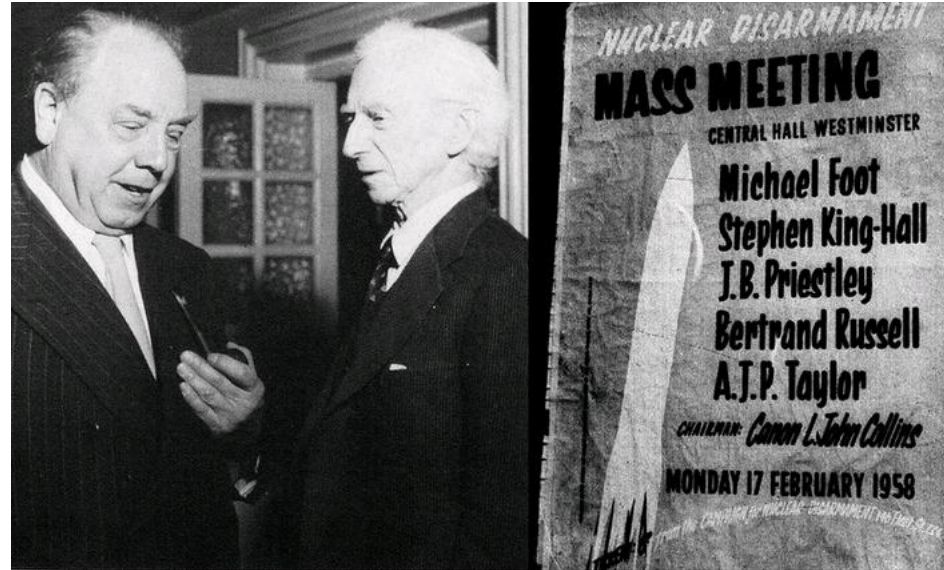
LESSONS FROM WEAPONS TECHNOLOGY IN WWI

Kahn explains on page 352 that after trench warfare had led to stalemate in North East France during 1915, Churchill's tanks were developed to try to make a breakthrough. The designers wanted a kind of Manhattan project to secretly manufacture thousands of tanks, and suddenly use them in a tremendous surprise attack to break through the German lines and to end the war pronto. Bureaucracy instead insisted that they were trialed in September 1916 in small numbers, thereby gaining little and losing the advantage of surprise. (This was due to the fact that Churchill lost his Cabinet position in November 1915, losing control of tanks.) The American Air Force's Colonel Billy Mitchell similarly wanted to use the aircraft to carry paratroopers to overcome trench defences like barbed wire and machine gun posts, but this was never utilized in WWI. The first use of chlorine gas by Germany on 22 April 1915 at Ypres had terrible effects and opened a five-mile long gap in the front, but this was just an experiment and was not exploited, so they lost the factor of surprise (a million simple hyposulphite of soda gas masks were issued by Britain to every soldier at the front within 14 days, thereby largely negating future German gas attacks).

German submarines nearly won the war for Germany because they were good at sinking merchant ships, cutting off logistics (supplies of food and munitions to the front and also to mainland Britain). But because Germany had predicted and planned for a six-week knockout blow of the 1870 variety, ignoring the effects of trenches in protracting the war and turning it into a long war of attrition, they had too few submarines for a quick success and a complete blockade of all ports. As a result, the original 110 German submarines were only able to sink 25% of the ships that left British ports, and so Britain had time to able to develop and deploy anti-

submarine convoys of ships, protected by hydrophone submarine detectors and depth charges. If Germany had taken the American Civil War lesson of trench defences seriously, it would have built more submarines and could have sunk or penned into port all allied shipping, thus winning the war. Instead, the allies were given the time to develop anti-submarine defences. (In WWII, Hitler had 1,162 submarines, which sunk 4 million tons of British ships a year in 1941-2, but Britain simply rationed food and turned gardens into farmland, enabling it to survive with fewer imports.) Likewise, German General Ludendorff deployed the SAS/marine type infiltration tactics against British lines in March 1918 and again at Chemin des Dames in May 1918, where small groups of specially trained, heavily armed fanatically motivated troops would force through the lines in surprise raids. Kahn points out on page 356 that this infiltration tactic was borrowed from the experiences of the French Captain Laffargue, whose handbook was ignored by Britain and France, but upon falling into German hands it "was at once translated into German and issued as an official German training manual, eventually becoming the basis for General Ludendorff's textbook ..."

THE OUTBREAK OF WWI



**SEE FAMOUS INTELLECTUALS J. B. PRIESTLY AND BERTRAND RUSSELL, ENTRY TICKETS ONLY 6 PENCE!
3,000 tickets were sold for CND's inaugural meeting, 17 February 1958, Central Hall Westminster**

17 February 1958 CND meeting poster displaying names of founders, including the WWI historian A. J. .P Taylor. Taylor possibly exaggerated the risk of an all out nuclear war by his manipulative interpretation of the history of the outbreak of WWI, which in fact was due to the Kaiser's obsession with defeating France again as per the 1870-1 war, using the Schlieffen Plan.

"July, 1914, has produced more books than any other month in modern history. ... Most of the nonsense has sprung from the very human conviction that great events have great causes."

- A. J. P. Taylor, *The Observer* newspaper, 23 November 1958.

Kahn relies on historian A. J. P. Taylor's claim in the *Observer* (later expanded into his anti-arms race book, *War by Timetable*) that WWI had small causes in accidents which escalated arms race into world war, not a large cause in the form of the Kaiser or the great German Schlieffen Plan for the invasion of France. The large cause, Kaiser's obsession with achieving a repeat of the short victorious war of 1870-1871, using the 1912 Schlieffen plan, had been planned for many years by Germany (much of their state funded railway system had been built for mobilization for the war of 1914). A. J. P. Taylor instead tried to portray all of these big causes as "nonsense" and to emphasise the role of trivia.

A. J. P. Taylor belittled this "great cause" and tried repeats Sir Edward Grey's false old claim that WWI was caused essentially by an accident during an arms race (the assassination of the Austrian-Hungarian Archduke on 28 June 1914). However, the resulting crisis was exploited by Germany as an excuse for war. On 3 August 1914, Germany declared war on France. Then on 4 August, Germany invaded Belgium, which was under British protection due to the 1839 Treaty of London. This forced Britain to declare war on Germany. However, some share for responsibility rests on the shoulders of British Foreign Secretary Sir Edward Grey, for failing to make it crystal clear to Germany in advance of its invasion of Belgium, that this would trigger World War. Grey was in a very difficult position politically, since the British Liberal Government was overwhelmingly pacifist and weak (apart from Churchill, in Cabinet as First Lord of the Admiralty), and feared making threats to Germany in case the strong language were used as an excuse for war. In this sense, the Liberal Party in 1914 appeased the Kaiser and thus encouraged enemy risk-

taking and aggression, just as the Conservatives did twenty five years later in the prelude to WWII. Sir Edward Grey later excused himself for failing to stop WWI, tragically, by blaming the arms race made war inevitable in 1914. As John F. Kennedy points out in his 1940 book *Why England Slept*, Grey's blame on the arms race was then quoted throughout the 1930's by pacifists and appeasers to try to prevent an arms race with Germany.

In fact, the arms race prior to WWI was what *delayed* the outbreak of war until 1914, and it was the weakness of the arms in Grey's hands, due to his Liberal Party Cabinet colleagues (his colleagues in a Cabinet meeting on 24 July, blocked Grey from making a statement to Germany supporting France). Grey could and should have made clear to Kaiser than an invasion of Belgium would lead to the declaration of war on Germany, because without such a declaration Britain's arms would not play any role in deterring Germany from starting WWI. To have a deterrent and then not to use it to try to deter war is the worst of all worlds. "Speaking softly while carrying a big stick" was proved in both 1914 and 1938 to undermine the credibility of the big stick. This policy was loved by the pseudo-pacifists like Norman Angell who wanted to make deterrence fail to "prove" pacifist rants right, winning Nobel Peace prizes and rewards like Knighthoods.

It is dangerous that this solid fact is still obfuscated by mainstream history, much in the way that the role of field quanta in physically causing electron indeterminacy in the atom is still obfuscated by groupthink physics. A. J. P. argument is that only the Serbs and Austrians really wanted war in August 1914, and that the relative slowness of the Russian mobilization plan as compared to Germany (Russia had fewer railways) caused it to mobilize on 30 July 1914 on the basis of the crisis, which automatically set off a German ultimatum to Russia on 31 July and to France on 1 August. The reason for Germany's ultimatum to Russia was its mobilization, while the German Kaiser's War Minister von Moltke refused to mobilize against Russia without also mobilizing against France, *on the basis that the Schlieffen Plan did not allow for mobilization purely against Russia*. Germany was tied to a railroad timetabled mobilization plan which ensured that France would be invaded in the next war.

This is the failure in A. J. P. Taylor's argument, for it proves that Germany was from 1905 when Schlieffen first developed his plan, tied to a plan which would trigger a world war in an event of a crisis. Furthermore, Germany could even have invaded France without invading Belgium (which under the 1839 Treaty of London would trigger war with Britain). It did invade Belgium on 4 August, triggering the pacifist Liberal government of the UK into having to declare war on Germany. There was no accident here, any more than the Prussian invasion of France in 1870 was an accident. It was a deliberate plan to occupy Europe, kept in a draw ready for use whenever the opportunity arose (as occurred after a gunshot Sarajevo on 28 June). A. J. P. Taylor's revisionist history that it was all an accident was not the view taken by the UK government's afternoon Cabinet meeting on 4 August 1914, which would not have chosen war if it believed the crisis was purely an accident. Instead, it was clear that even if the 28 June assassination was an "accident", Germany was exploiting that "accident" for its own ends - the conquest of Europe by force. Taylor ignores this factor.

Sir Edward Grey failed to make it clear to the Kaiser what Britain would do if Germany invaded Belgium on 4 August 1914. Grey was uncertain himself, since it was a Cabinet decision in the afternoon that resulted in the declaration of war, but it was Grey's duty as Foreign Secretary to communicate effectively and avoid a muddle. While some responsibility is down to the Liberal Cabinet as a whole, Grey not only failed but also - in blaming the arms race - gave the appeasers the excuse to avoid an all-out arms race with Germany in the 1930's, which was financially more damaging to Germany than to Britain. Historians by and large follow A. J. P. Taylor's lead. He taught many leading historians and imparted his dogmatic viewpoint that the war was an accident in an arms race, rather than dictatorial plan of invasion, instigated in August 1914 by opportunism, with the accident used as camouflage. Lloyd George's *War Memoirs* make clear Edward Grey's responsibility and failings, but Lloyd George was partly responsible too, as well as others in the Cabinet, including Winston Churchill, who always wrote lucrative, best-selling, poetically wise books full of "lessons" after a war, despite having personally failed to use his eloquence to overcome popular pacifism and deter the war the way he wanted. Winston Churchill on Liberal complacency over war during a 1911 crisis:

"It is too foolish, too fantastic to be thought of in the twentieth century. ... No one would so such things. Civilization has climbed above such perils. The interdependence of nations in trade and traffic, the sense of public law, the Hague Convention [the First Hague Peace Conference successfully outlawed gas warfare on paper agreements in 1899, agreements which weren't worth the paper they were written on during WWI], Liberal principles, the Labour Party, high finance, Christian charity, common sense have rendered such nightmares impossible."

- Winston Churchill, *The World Crisis*, Charles Scribner's, New York, 1923, page 33.

"The [August 1914 Liberal Party UK Government]Cabinet was overwhelmingly pacific. At least three-quarters of its members were determined not to be drawn into a European quarrel, unless Britain were herself attacked, which was not likely. ... They did not believe that if Germany attacked France, she would attack her through Belgium ..."

- Winston Churchill, *The World Crisis*, Charles Scribner's, New York, 1923, page 211.

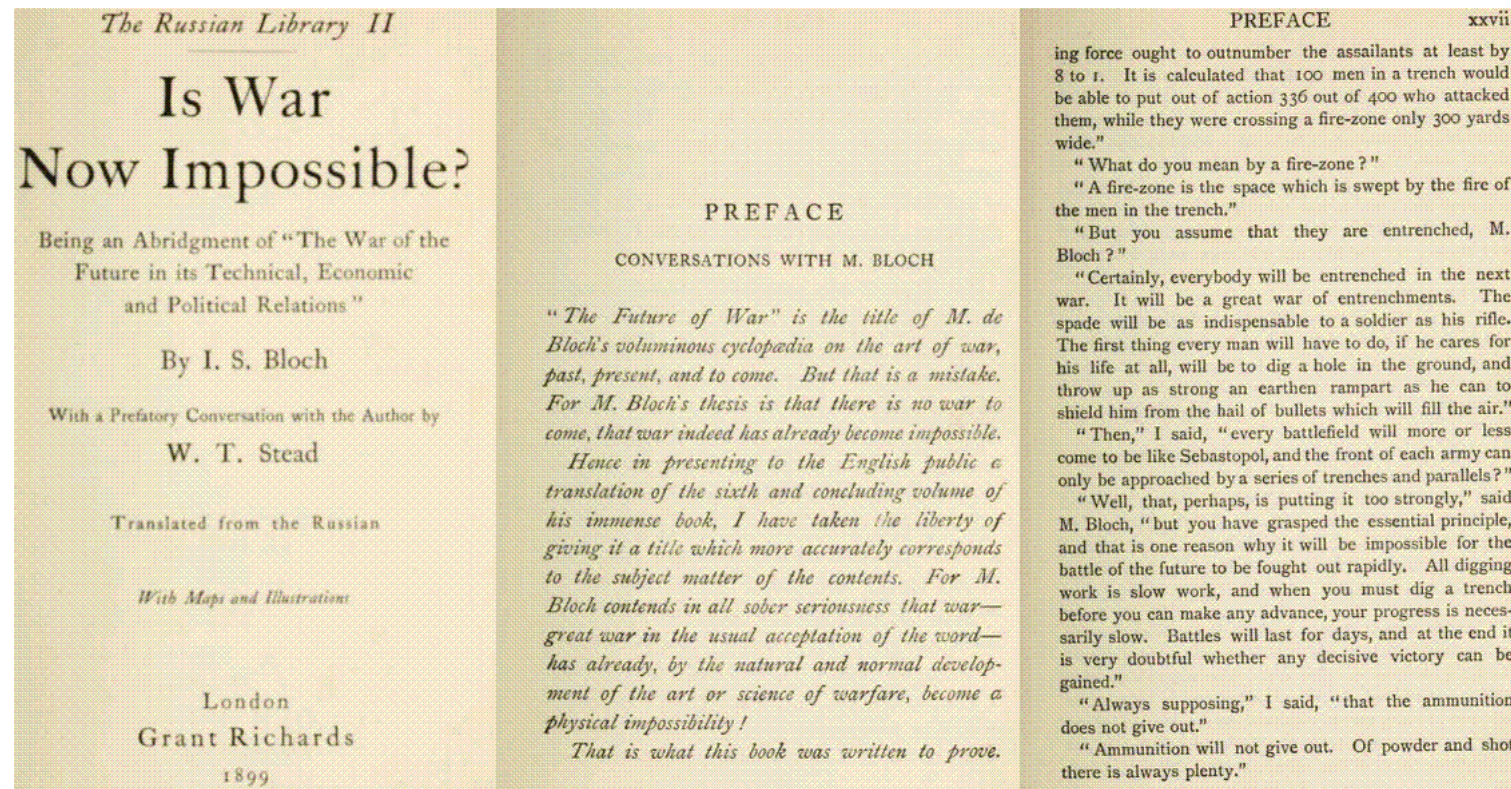
(To emphasise the point being made, *a deterrent and even an arms race may be no use, if the government is not clear about using that deterrent in a crisis*. In any crisis, the liberal or conservative government is going to want to do the exact opposite of being firm, as proved by Edward Grey in 1914 and Neville Chamberlain before September 1939. The liberal or conservative government in a crisis is going to prefer appeasing diplomacy, *for fear starting a war by being firm*, because it

is afraid that the other side will deliberately misinterpret the firmness as a threat, for propaganda purposes to justify some kind of first strike. In short, in order to be able to credibly use the deterrent to prevent an extremely provocative action in a crisis situation, such as the invasion of Crimea by Russia, you need civil defence to mitigate retaliation. If you don't have the stomach to have civil defence for fear of CND Vice Chair Jeremy Corbyn, deterrence fails. Eventually, the other side goes too far in exploiting your weakness, starting off an unnecessary war.)

The liberal-pacifist dogma that international economics, banking and trade, prevents international war was dismissed by future British Prime Minister, Robert Cecil in 1862, during the American Civil War:

"A few years ago a delusive optimism was creeping over the minds of men. ... It was deemed heresy to distrust anybody, or to act as if any evil still remained in human nature. ... we were invited to believe that ... exports and imports had banished war from the earth. ... that we were permanently lifted from the mire of passion and prejudice ... The last fifteen years has been one of long disenchantment; and the American Civil War is the culmination of the process." (Quotation: R. Taylor, *Lord Salisbury*, Allen Lane, 1975, p. 21.)

Kahn makes the additional argument on page 350 that the "knockout blow" Schlieffen Plan (which called for Germany to invade and defeat France in six weeks and then do the same to Russia), in ignoring the lessons of trenches cheaply and quickly stopping the over-hyped new offensive technology (machine guns and mortars) during the American Civil War of the 1860s, was partly justified by the populist theories about the economic independence of free trade preventing long wars of attrition (for instance Norman Angell's 1908 pacifist book, *The Great Illusion*): "most people ... argued that the economic independence of nations was so great that the sheer interruption of normal commerce would cause a collapse after a few weeks or months ...". Thus, the *Great Illusion*-type deceptive pacifist anti-war propaganda reduces deterrence, causing war. Those few people like I. S. Bloch who *did* predict on the basis of sound reasoning that trenches of the American Civil War type would prevent a knock out blow in 6 weeks were ignored by war planners:



I. S. Bloch's widely-ignored prediction, made in 1899 that trench warfare ("everybody will be entrenched in the next war") will make it: "impossible for the battle of the future to be fought out rapidly."

I. S. Bloch in 1899 predicted in his book *Is War Now Impossible* (a summary of his *The War of the Future*) that trenches ("everybody will be entrenched in the next war") would negate machine guns and mortars, making it: "impossible for the battle of the future to be fought out rapidly." Unfortunately, he buried that fact-based prediction within a lot of speculative, grandiose pacifist-biased propaganda which naively and false claimed that such *problems* made war an actual *impossibility*.

"The most spectacular military event of World War I, the development of two parallel lines of trenches from the Swiss frontier to the English Channel, while predicted by Bloch, came as a complete surprise. ... given the examples of such warfare in the American Civil War ... it is hard to see how military experts could have overlooked the possibility that the widespread availability of machine guns and barbed wire might result in static trench warfare, but the military planners on both sides completely overlooked the possibility."

- Herman Kahn, *On Thermonuclear War*, 1960, page 354.


OUTBREAK OF WWII OCCURRED DUE TO SIMILAR PACIFIST-DRIVEN APPEASING WEAKNESS AS THAT RESPONSIBLE FOR THE 1914 ARMS RACE TURNING INTO WWI


C. E. M. JOAD

Why War?

“My case is that war is not something that is inevitable, but is the result of certain man-made circumstances; that man can abolish them, as he abolished the circumstances in which the plague flourished.”

NEW REVISED EDITION





C. E. M. Joad

C. E. M. Joad, M.A., D.Lit., was born in 1891, educated at Blundell's School, Tiverton, and Balliol College, Oxford, and entered the Civil Service in August 1914. He was in the Ministry of Labour from 1914 to 1930. He then resigned and became Head of the Department of Philosophy and Psychology at Birkbeck College, University of London. He is the author of numerous original books of philosophy, having chiefly established his reputation as an interpreter of philosophy for the general public. His *Guide to Philosophy*, published in 1936, has been reprinted nine times. Is also the author of two unusual autobiographical books, the *Book of Joad* and the *Testament of Joad*. Finally, he is well known as a pacifist.

Mr. Churchill and Sir Norman Angell. **VITAL !!!**

The process, it is obvious, is not one that makes for security. One does not, if one is wise, insure oneself against fire by devoting all one's savings to the storing up of explosives. Apart from the vested interest in war of the armament makers, the professional interest in war of young men trained in the use of modern weapons and anxious to exhibit their technical skill, is it not obvious that those nations which possess great armaments will, sooner or later, use them as surely as children will use elaborate and exciting toys? The most convincing comment that I have heard on the whole lunatic business was made at a meeting which I attended as an undergraduate at Oxford in the year before the war. The meeting was addressed by a Cabinet Minister. "There is," he said, "just one way in which you can make your country secure and have peace, and that is to be so much stronger than any prospective enemy that he dare not attack you, and this is, I submit to you, gentlemen, a self-evident proposition." A small man got up at the back of the hall and asked him whether the advice he had just given was the advice he would give to Germany. A faint titter ran through the meeting—the audience was, I suppose, above the average in political intelligence—but there was no applause.

the peace? Our Cabinet Minister tells us in the profundity of his wisdom, that both will be secure, both will keep the peace when each is stronger than the other. And this, he thinks, is a self-evident proposition." This time there was loud applause. It remains to add that the Cabinet Minister was Winston Churchill, his questioner Sir Norman Angell.

THE CASE AGAINST WAR 71

Pacifist Professor Cyril Joad's sneering attack on Winston Churchill's call for deterrence, on page 71 of the September 1939 reprint of his book *Why War?*

Professor-pacifists who dominated the anti-war scene hated the idea of ending war by the use of overwhelming deterrent force, which means they downplayed Nazi genocide dangers and launched paranoid and silly attacks on Winston Churchill. Churchill was an egotist, a capitalist, and made many military errors that cost lives, such as his failed assault on Turkish forces at Dardanelles in March 1915, and then the similarly disastrous Gallipoli tragedy the same year, led to Churchill's forced resignation from the Cabinet in November 1915.

"The British people were still generally ignorant of, and apathetic to, the dangers of the situation in central Europe, despite the eloquent efforts of Mr Churchill [**who was easily dismissed as a stupid warmonger by powerful, media-dominating, populist anti-deterrence "pacifists" such as professor Cyril Joad**] to enlighten them. Mr Chamberlain alternatively lulled them into a sense of false security by statements in the House of Commons as to the satisfactory progress of British rearmament, or endeavoured to infuse them with his own sincere belief that in war there are no winners. ... The fundamental and salient weakness of the Opposition was that, in the majority of cases, they evaded the issue ... because no Member of the house was sufficiently assured that the people of Britain [*misled by one-sided pacifist media hyped weapons-effects-exaggerating propaganda directed against civil defence and thus against credible, strong deterrence, which was not opposed in a full blown democratic debate with government experts due to official secrecy*] would have endorsed such a rejection [*of Hitler's demands, thus*

making deterrence credible at the risk of having a war with Germany while the chances of success were still reasonably good]. They said, which was not true, that there would have been no war, because Hitler was bluffing ... they would not say that, at Munich or at Godesberg, Mr Chamberlain, in the face of what certainly was not bluff, should have taken a determined stand, saying 'Very well, we shall fight!.'

- John Wheeler-Bennett, *Munich: Prologue to Tragedy*, pages 62-4 and 184-5.

This situation of heavily rearmed but nearly bankrupt dictator invading nearby countries on the pretext, at first, that his own nationals in those countries want succession or are under threat from the states involved, is analogous in some respects to Russia's annexation of Crimea in January 2014, while Russia's decision to start bombing anti-Assad forces in the Syrian Civil War is analogous to the Germany's air support for the forces of the dictator Franco in the Spanish Civil War, 1936-1939. The existence of nuclear weapons and chemical weapons on Russia's side may seem to knock this analogy sideways, *but it is in fact makes the analogy stronger, when the exaggerated air bombing fears of the 1930s are examined realistically.*

Kahn makes the point in the Preface of *On Thernuclear War* that the "bad choices" of history arise not necessarily through ignorance or stupidity, but due to the paucity of alternatives, for example Hitler offered his opponents a clever version of "Hobson's choice": *you can have peace, or you can reject peace*. The first defence of anyone making a "bad decision" is always the claim: "there was no alternative." It is therefore a big business enterprise for politicians to try to find excuses to ignore or dismiss sensible solutions to crisis situations, in order to justify following their dogmatic agenda, whether that is pacifism at any price, or war. Kahn writes on page xv:

"The final outcome of benevolent, informed, and intelligent decisions may turn out to be disastrous. But choices must be made ... the current and future reality of vast military power concentrated in the hands of several unpredictable countries, accompanied by the past reality of expansionist doctrine ... had brought Americans and Europeans face to face with the sobering thought that this triumph of material progress and human security may be reversed. ... we have to be prepared for the possibility that we have chosen wrongly or that events may nevertheless continue to unfold in a thoroughly relentless way in spite of our choices."

It is a fault of unfortunate editing of *On Thernuclear War* that this comment on the nature of choice in the Preface is so separated from Kahn's discussion of the irrationality of human choices chapter IV, *Conflicting Objectives*, particularly pages 119-125. In brief, Kahn there proves that traditional approaches to trying to find the "best choice" have been *completely illogical*. Committees of experts are always apt to make unpredictable groupthink decisions for *options that nobody on the committee really wants* (this occurs because of *tactical voting* by all "sides" in an almost-balanced controversy *to save face by ensuring that no side really "wins"*). Additionally, Kahn explains that even the rules of mathematical logic had been misapplied in computer based systems analysis by the RAND Corporation, by seeking an optimal result for the *most probable* set of circumstances, instead analysing the system's response for under *unlikely circumstances* which of course are often the circumstances where poor performance has spectacular results:

"In the early days at RAND, most studies involved an attempt to find the 'optimum' ... The emphasis was on comparing thousands, sometimes tens of thousands, of different systems under idealized conditions; then the 'best' one would be picked. ... The new viewpoint is different. We now tend to compare a rather small number of different systems under widely varying circumstances and objectives. ... A system is preferred when it performs reasonably well under probable circumstances ... and yet hedges against less probable or even improbable situations ..."

The reason is simple: disasters and world wars rarely occur under the most probable set of conditions that everyone expects. Enemies exploit the factor of surprise, engineer secret weapons, and so on.

Kahn then debunks the idea that by a committee of experts can vote for a simple consensus or circumstance risk template that adequately predicts revolutionary new threats or unexpected disaster mechanisms. Committees of course easily reach good decisions where the choices are uncontroversial, where you don't really need experts, but bad decisions result from the very controversial situations which the committee is supposed to act rationally. First, Kahn discusses the groupthink "paradox of voting" which was first pointed out by E. J. Nanson and elucidated by Kenneth J. Arrow in his 1951 book *Social Choice and Individual Values* (Wiley, New York, page 3). This paradox of voting is due to the fact that given a set of multiple options to choose from, each individual may have a different set of prejudices so that if there is a deadlock over the primary choices, the committee will likely to end up *only being able to agree* for choices nobody wants, and even then the end result is unpredictable from the laws of logic even if you know the preferences of each individual, as Kahn explains on page 121:

"It turns out that it is perfectly proper to be disturbed because, even after analysis, there seems to be no way in principle (and very often in practice) to make this committee act reasonably - unless we accept a rule of autocracy and delegate the decision making to one of them, a dictator."

Secondly, Kahn on page 122 examines a situation (from Leonard J. Savage's 1954 book *The foundations of statistics*, Wiley, New York, page 207) which explains precisely how a committee (in a deadlock over a controversy) can end up taking a "tactical voting" decision for something *that is nobody's preferred option*:

"They want some meat for a picnic so they ask the butcher what he has available. He tells them he has turkey and ham. They ... decide on turkey. The butcher then notices that he also has chicken ... The committee decides that if he has chicken available, they no longer want turkey, they want ham. That is the way committees often act ... The reason the committee changed its mind was that one member ... really liked chicken and 'sort of' preferred ham to turkey. Once chicken was available and he could not have it, he forced his colleagues to concede to him on the ham."

This committee based tactical-voting explains how sudden reverses of policy can occur in Cabinets under pressure. Minority-viewpoint members who cannot get the preferable option they want, end up coercing through a "compromise" that is nobody's preferred option; a poorly-researched policy that can trigger war.

The situation which caused WWI was far more similar to the peace-mongering, war-hatred and general war ignorance that preceded WWII. Britain in 1914 had a military deterrent, but Liberal politics effectively weakened its credibility and thus prevented it from *being used to* deter the German invasion of Belgium on 4 August 1914. The situation in 1939 differed only in that, as a result of Grey's false vague blame on the arms race for WWI, Britain's deterrent in 1939 was *undermined militarily in addition to politically (appeasement)*. Britain's late 1930s "rearmament" *wasn't gaining any time* (as Chamberlain and his apologists still dogmatically claim in non-quantitative historical analyses of the **Zeno Paradox** sort today; as soon as you look at the actual numbers you can see why Chamberlain was wrong). By spending less each year than Germany, Britain was losing advantage and losing relative strength. In any race *you lose advantage with each second that passes while you run slower than an opponent, because the gap is widening, not decreasing*:

ANNUAL NATIONAL DEFENCE EXPENDITURES (millions of dollars)

<i>Country</i>	<i>1933</i>	<i>1934</i>	<i>1935</i>	<i>1936</i>	<i>1937</i>	<i>1938</i>	<i>1939</i>
Britain	455	480	595	846	1263	1693	1817
Germany	253	299	381	2600	3600	4000	4400

Source: J. F. Kennedy, *Why England Slept*, Sidgwick & Jackson, London, 1962, p. 184.

Sir John Slessor, Marshall of the RAF, proves we were losing the arms race, not "buying time" by appeasement, on page 161 of in his 1957 autobiography, *The Central Blue* (Praeger, New York):

"Every undergraduate knows that a sound economic situation is an essential basis of military strength; but ... the Government continued to rule early in 1938 that the three fighting Services between them should not be allowed to spend more than about £1600 millions over the five years 1937 to 1941 - an average of little over £300 millions a year *for all three Services*; and this eighteen months after the Prime Minister [Neville Chamberlain], as Chancellor of the Exchequer, had confirmed that he knew the Germans were spending £1000 millions a year on warlike preparations, a figure which by now, of course, was being greatly exceeded."

(Note also that the widely-believed propaganda that the Spitfire and Hurricane fighter aircraft then being built were a wonderful contribution thanks to Chamberlain, is actually a lie. *Both aircraft were already obsolete compared to the German Me-109 when used in the Battle of Britain in 1940. Thus the growing stockpile of Spitfires in 1938 were not only outnumbered in quantity by Germany, but were also soon obsolete in quality. Battle of Britain Tom Neil, author of Scramble, aged 95, shot down 14 German aircraft and won two DFCs in the Battle of Britain. He has now debunked populist myths. He joined the RAF in 1938 and was taught to fly using a 20 year old obsolete Tiger Moth so that when in 1940 when finally given charge of 249 squadron he failed in practice to hit any target flags with his first 30,000 rounds of ammunition, and then he found that German Me-109s had a larger engine than his Spitfires and could climb faster as well as higher, and also had better guns and more ammunition than Spitfires and Hurricanes. Britain won the Battle of Britain not because it had superior aircraft as hyped up wartime propaganda for the Spitfire claimed, but rather, it survived the German onslaught despite the fact that it had poorer aircraft: "We didn't win. But we didn't lose."* Not only were Britain's Hurricane and Spitfire actually inferior to German Me-109, but they were outnumbered. **Germany had over 700 superior Me-109s and 227 Me-110s, compared to Britain's inferior 650 Hurricanes and Spitfires. This disproves Chamberlain's claim.** It was civil defence evacuation and shelters that won the Battle of Britain when German bombers on 7 September 1940 stopped bombing RAF air fields and instead bombed cities. By reducing casualty rates and panic, civil defence then gave the RAF the time for fighter attrition to cut the Luftwaffe down to size. On 15 September, 60 German bombers were shot down and on 17 September Hitler postponed the invasion of England, Operation Sea Lion, and turned his attention to planning an invasion of Russia instead.)

Winston Churchill, *Blood, Sweat and Tears*, Putnam, New York, 1941, page 60, writes with some bitterness of the Munich crisis of September 1938: **"It is the most grievous consequence of what we have done and of what we have left undone in the last five years - five years of futile good intention, five years of eager search for the line of least resistance, five years of uninterrupted retreat of British power, five years of neglect of air defences ... We have been reduced in those five years from a position of security so overwhelming and so unchallengeable that we never cared to think about it. We have been reduced from a position where the very word 'war' was considered one which would be used only by persons qualifying for a lunatic asylum."**

Kahn, *On Thermonuclear War*, page 378: **"neither the British nor the French had the resolve to use their superior military power or their superior resources to check German aggression until it was too late. ... The longer they put off using their superior power, the less credible it became that it would ever be used. Finally, their power became inferior, so that even when its use was seriously threatened, the German government was no longer impressed."**

The popular and official exaggerations of aerial warfare effectiveness which led to appeasement were based on unprotected civilians bombed in WWI and in the Spanish Civil War, leading to roughly the same scale of error as Richard Rhodes makes in his discussion of Hiroshima's casualties: British official estimates were 50 casualties per ton of bombs dropped on cities, plus a further 150 additional hysterical psychiatric casualties who would riot against the government to try to make it surrender to the enemy in order to stop further bombing and destruction (Kahn, page 376). This is a total of 200 casualties per ton of bombs, an exaggeration by a factor of 100 of the 2 casualties per ton which actually resulted even where most people did not use outdoor shelters in winter in Britain. Similarly, the 1.3 mile radius for 50% mortality outdoors in Hiroshima is preferred to the 0.12 miles radius for people in concrete buildings, again showing that surprise attack on people outdoors in low skyline cities with nuclear weapons produces over one hundred times as many casualties as occur for people in modern concrete buildings. In the 1930's, the official mixture of facts from surprise air raids against unprotected people, and speculative fantasy from a consensus of psychiatric experts who are influenced by reading "next war fiction" about bombing neuroses and shell shock, was horrific and toxic to anyone trying to have a rational debate on the need for an arms race to deter a war:

"... it is difficult for those who have survived the blitzes and V-bombings to understand or to recapture the sense of fear and apprehension which oppressed Britain in those days. Our imagination had been whetted by the works of those uninhibited writers of 'next war' fiction, who had assured us that within a week of the outbreak of hostilities, London would be rendered uninhabitable by bombings and by gas. ... In Paris they were fighting for seats on trains, and the roads out of the city were choked with traffic; in London they were digging trenches."

- John Wheeler-Bennett on the Munich crisis of 30 September 1938, *Munich: prologue to Tragedy*, 1948, pages 158 and 167.

(After Chamberlain had appeased Hitler by forcing the Czechs to accept a Nazi occupation of the Sudetenland, outraged historian Wheeler-Bennett flew there to organize the rescue of Jewish refugees from the Nazi annexed territory. Hitler apparently responded by having an agent place a time-bomb in the luggage of the aircraft, which exploded on the next flight after Wheeler-Bennett's, blowing up that aircraft. Critics may say that Wheeler-Bennett's history is prejudiced by first-hand involvement, but the same "personal bias" argument applies to the history written by many others involved in wars, e.g. the war histories written by Winston Churchill. But, in a sense, this makes them primary sources.)

BRITISH "PUNCH" CARTOONS RIDICULING THE NAZI THREAT AS A MERE JOKE

We showed in previous posts that political cartoonist David Low almost stood alone in condemning the Nazis as a threat, and in response, Hitler - who read British newspapers to check how well appeasement was going - coerced the British government into putting pressure on Low's newspaper publishers and editors to stop printing cartoons critical of Hitler. Similar coercion occurred when Captain W. E. Johns criticised the British government's weak rearmament and appeasement tactics while editor of the popular weekly and monthly magazines, *Flying* and *Popular Flying*; Johns was fired. *This is vitally important: Hitler was not merely a distant threat, far away in Germany, but was actually able to coerce the British government into trying to suppress criticisms of the Nazis by threatening the jobs of critics!* This is never admitted in mainstream pacifist histories, which portray critics of Nazis as cowardly warmongers. The mainstream of the the British media was still trying to ridicule the threat of Nazi rearmament long after Hitler's election as Chancellor of Germany in January 1933. For instance, see the following *Punch* cartoon by Bernard Partridge, published 27 September 1933 (*Punch* was a popular anti-establishment political satire cartoon magazine, similar in some ways to *Private Eye* today; our point is that they took the *wrong side*):



THE MYSTERIOUS CIVILIAN.

FRENCH GENDARME. "SEE THAT FELLOW! I SUSPECT HIM OF CARRYING CONCEALED ARMS. I OUGHT TO SEARCH HIM."
P.C. JOHN BULL. "VERY LIKELY, MATE. AND I MUST SAY YOU SEEM TO HAVE RIGGED YOURSELF OUT FOR THE JOB PRETTY THOROUGHLY."

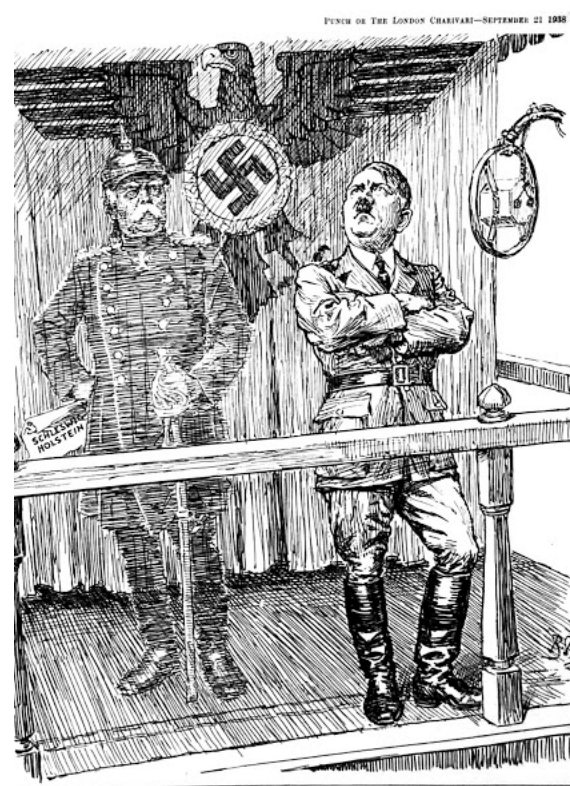
Bernard Partridge's 27 Sept 1933 *Punch* Cartoon ridiculing German threat to peace after Hitler election as Chancellor in January 1933. Note the Nazi Swastika on the angry-looking German civilian's haversack!

Partridge shows French gendarme and a British policeman ("P.C. John Bull") having a disagreement over whether to search a suspicious German, suspected by the French gendarme of carrying hidden weapons. The British policeman replies to a gendarme that it is "very likely" the German has some concealed weapons, but then negates that threat with a high-handed sneer that the French are provoking trouble by being heavily armed. In other words, Partridge - and most people in Britain - did not see the problem with Germany having a few secret weapons in 1933. The problem Partridge saw was that the heavy deterrent arms of France were likely to provoke conflict, and the most sensible way forward was to set a good example by being unarmed. It is vital to make this fact clear, because pacifists are forever trying to reinvent the wheel by misunderstanding the past. Churchill's early warnings of German rearmament were seen as silly provocation by a warmonger. That was their context. Bernard Partridge's later *Punch* cartoons even during the Munich crisis of September 1938, continued to play down the danger, firstly on 7 September 1938 by making Hitler look like a crazy busker who attracts both the wild dogs of war and the doves of peace, and then on 22 September 1938 by presenting Hitler as statesman who achieved victory using diplomatic "bluff" as opposed to the blood used by his predecessor:



THE MASTER-SINGER OF NUREMBERG

Bernard Partridge's 7 September 1938 *Punch* cartoon ridiculing Hitler as a singer who attracts wild dogs of war and doves of peace. He completely misunderstood the danger of the man, like most pacifists who saw rearmament and war as the lethal danger, not appeasement of a coercive thug who was apparently desperate to conquer Europe.



BLUFF AND IRON

The Old Chancellor. "Not my methods exactly, but you seem to have nearly the same success."

Bernard Partridge's 21 September 1938 *Punch* "Bluff and Iron" cartoon, contrasting Hitler's bloodless "bluff" method (threatening war to achieve "peaceful" coercion and invasions without bloodshed, until 1939 anyway) to the force used by his predecessor. The message seems to be that Hitler is a successful statesman who doesn't actually start wars, although Herman Kahn and John Wheeler-Bennett argue that in September 1938 Hitler was *not* bluffing but was really prepared to go to war if a peaceful Nazi invasion of the Sudetenland was prevented. British Prime Minister Chamberlain and French President Daladier were not simply "outbluffed" at the Munich conference by Hitler. They could see he was willing to go to war, and they were not prepared to go to war over Czechoslovakia. There was no "bluff" involved. However, as both Kahn and Wheeler-Bennett point out, the few members of the House of Commons who were critical of the appeasement of Hitler in September 1938 all argued falsely that he was bluffing (the rest accepted he wasn't bluffing and were grateful to Chamberlain for helping to "avert" - or rather delay until the arms race gap was even worse - war). Nobody dared to earn the "Churchill warmonger" badge from the "pacifists" by arguing for using force to stop German rearmament, thus preventing a world war. By closing down sensible options, the "pacifists" contributed to the war.

World War II was really due to the "false alternative" or "no alternative" dilemma, that we also see in modern physics today. The official opposition in the House of Commons to the Chamberlain's Conservative Party appeasement was the even more pacifist Labour Party, led from 1935 by the disarmament lawyer **Clement Attlee, who had first-hand seen the horrors of Winston Churchill's war policies: Attlee was personally in the firing-line of Winston Churchill's disastrous Gallapoli Campaign back in August 1915.** Churchill's warnings of German rearmament could easily be dismissed by the men he had sent to hell in WWI. **Clement Attlee as Labour Party Leader stated in the House of Commons "Defence Policy" debate on 22 May 1935:**

"We reject the use of force as an instrument of policy. We stand for the reduction of armaments and pooled security ... Our policy is not one of seeking security through rearmament, but through disarmament. ... the creation of an International Police Force under the League."

Therefore, there was no really democratic debate about how to deal with Hitler: both sides of the House of Commons wanted appeasement. The "International Police Force" was just as farcical an idea under the League of Nations as today under the United Nations, where vetoes from Russia and fears of escalation or another Vietnam prevent international peace keeper from being sent into Syria and Ukraine. The whole idea of an "International Police Force" is debunked by the fact that the police even under the best circumstances only succeed in catching a small percentage of offenders, and in any case they have to wait until a crime has been committed before acting. By the time an invasion has occurred in the international arena, it is too late to stop bloodshed, and as Vietnam proved, attempts to police large areas of

the real world against determined ideological fanatics causes an escalation of violence, at enormous cost in human lives and money. This is why "International Police Forces" are worse than useless. What is needed instead of policemen trying to catch culprits after invasions, is *credible deterrence and the ability to use force to prevent the attacks and invasions from occurring in the first place* (e.g. neutron bombs to deter, stop or disperse the *massed* tank barrage columns as they try to pass the frontier, plus non-nuclear anti-tank rockets which can stop *individual* tanks if they are dispersed in response to the neutron bomb deterrent).

Japan distracted international attention away from Germany, just as Attlee averted an arms race:

"In 1933 it was not Germany but Japan that seemed to pose the greatest threat ... In September of 1931 the Japanese army in Korea had invaded the north Chinese province of Manchuria ... a flagrant affront to the League of Nations and the principle of collective security. ... the League merely dispatched a commission of inquiry under Lord Lytton. The end result was the most ineffective sanctions possible ... The menace in the Far East was to play a vital part in encouraging appeasement of Germany. ... Britain could do nothing [when Japan launched a full invasion of China in 1937] without the USA, who would not budge from her self-imposed isolation. ... fear of upsetting the USA was paramount. ... The conduct of the Labour opposition was marked by a head-burying exercise that outdid the average ostrich in skill. Attlee wanted the weight of 'the whole world's opinion' to restrain potential aggressors and condemned rearmament. ... There was ... desperate anxiety to avoid an arms race."

- Malcolm Pearce and Geoffrey Stewart, *British Political History 1867-1995, Democracy and Decline*, Routledge, London, 2nd ed., 1996, pages 313-314.

The disastrous financial and human costs of WWI started under the pacifist government of Britain's Liberal Party, killed the Liberal Party after the war:

"The Liberal party ... was involved in an encounter with a rampant omnibus (the First World War), which mounted the pavement and ran him over. After lingering painfully, he expired. A [contrived, specious, spurious, propaganda-based] controversy has persisted ever since as to what killed him."

- Professor Trevor Wilson, *The Downfall of the Liberal Party*, Collins, London, 1966, page 20.

Germany has been reduced officially to having an army of just 100,000 soldiers with no General Staff, no air force, and just 6 battleships under the Versailles Treaty following WWI. This disarmament, together with hyperinflation in 1923 in response to the French demands for massive war reparations, infuriated German military patriots into starting militant underground movements like the National Socialists that Hitler had joined, who claimed that the armistice in 1918 had been a sell out by a small number of Jews, and sought to secretly rearm Germany:

"... in spite of the tremendous scale of the violations it still took five years, from January 1933 when Hitler came in to around January 1938, before they had an army capable of standing up against the French and the British. At any time during that five-year period if the British and the French had had the will, they probably could have stopped the German rearmament program. ... it is an important defect of 'arms control' agreements that the punishment or correction ... is not done automatically ... but takes an *act of will* ... As late as 1934, after Hitler had been in power for almost a year and a half, Ramsey MacDonald still continued to urge the French that they disarm themselves by reducing their army by 50 percent, and their air force by 75 percent. ... *probably as much as any other single group I think that these men of good will can be charged with causing World War II.* ... Much of the current discussion about arms control strikes me as being very similar ... October 14, 1933, when Germany withdrew from a disarmament conference and the League of Nations ... the British and the French contented themselves with denouncing the action. ... On March 16, 1935, Hitler decreed conscription in Germany."

- Herman Kahn, *On Thermonuclear War*, pages 390-392.

The 19 members of the League of Nations, the precursor to the (un)United Nations, could not agree to stop Hitler by force, just as recently the (un)United Nations failed to agree to stop civil wars in Ukraine and Syria due to Russian veto, so as Kahn explains on page 393, the League of Nations protest:

"simply strengthened Hitler by showing both the Germans and their potential victims that he could safely ignore public opinion and moral outcries. It is simply not true that a potential aggressor is likely to be restrained from preliminary actions by foreign public opinion [especially where in 1930's Germany or today's Russia, the media is effectively under indirect state control and turns foreign hostility into a propaganda tool to bolster support for war] - particularly if he can justify his action by ... reasonable-sounding excuse, or even better, make the charge uncertain by making the action ambiguous."

The League of Nations was also undermined when it failed to stop Italian fascist Mussolini from invading Abyssinia (located in Eritrea and North Ethiopia today) in October 1935, and blistering the local populace with mustard gas. Hitler's reoccupation of the Rhineland in March 1936 was preceded by, and encouraged by, the experience of the apathy of League of Nations. Two years later, on 11 March 1938, he annexed Austria. No international police force was hastily convened to stop

him either time, for fear that such a police type action would escalate into world war there and then (this is precisely the whole problem with the simplistic/idealistic idea of somehow "policing" world peace; every "arrest" risks turning into a world war):

"At several points the democracies seemed willing to fight - when Hitler relaxed the pressure ever so little and dropped some straws which the drowning democracies desperately grasped. The more often Hitler presented the choice of war or peace as a real choice, the more the democracies were demoralized. At no time did Hitler threaten to initiate war against France and England. He simply threatened to 'retaliate' if they attacked him. The Munich crisis had an incredible sequel in March 1939. In spite of ... the guarantees of Chamberlain and Daladier ... Hitler occupied the rest of Czechoslovakia. The technique he used is such an obvious prototype for a future aggressor armed with H-bombs that it is of extreme value to all who are concerned with the problem of maintaining a peaceful and secure world ..."

- Herman Kahn, *On Thermonuclear War*, page 403.

Kahn then quotes from **Daniel "pentagon papers" Ellsberg's** March 1959 Lowell Lectures, *The Art of Coercion*, which describes how WWI Iron Cross recipient Adolf Hitler in Berlin on 14 March 1939 personally coerced Czech President Hacha and his Foreign Minister Chvalkovsky *to surrender his own country to the Nazis for the sake of peace*. Ellsberg quotes Hitler's interpreter Paul Schmidt:

"The invasion would begin at 6 a.m. that morning; in five hours. There were, said Hitler, 'two possibilities. The first was that the invasion of the German troops might develop into a battle. ... The other was that the entry ... should take place in a peaceable manner ... The Fuhrer advised him to telephone Prague. ... Hitler signed the [peaceful invasion authority] documents, left the room. ... at that moment the telephone line to Prague was out of order. ... Hacha and Chvalkovsky ... turned from the documents and refused to sign. ... But the Germans [Goering and Ribbentrop] pursued them around the table, thrusting the documents before them and pressing pens into their hands, shouting 'Sign! If you refuse, half Prague will lie in ruins from aerial bombardment within two hours'. ... Hacha [fainted but] was revived by Morell, with injections. He continued to resist, fainted again, and was revived again. ... At 3:55 Hacha signed the documents. He called Prague, Schmidt finally having gotten through, and ordered that there should be no resistance. ... The agreement that the Czechs signed told the world: 'The conviction was expressed on both sides that all endeavours must be directed to securing tranquility, order and peace in that part of Central Europe.'"

Notice the "peace" propaganda message of Hitler, forever presenting himself as the pacifist, the moralist, the disarmer, the lover of order, so closely interwoven with gradual erosion of liberty by Hitler's salami tactics, cutting into his enemies slice by slice, then allowing the furore to die away, then taking another slice, until the whole cake is gone. Kahn makes the point on page 407, that Hitler's original plan for WWII was a simply repeat of the Schlieffen Plan used 25 years earlier in August 1914, but in 1940 he modified it slightly with a detour through the Ardennes Forest, to bypass the Maginot Line, a tactic suggested by the innovator von Mannstein, who had to bypass the General Staff to talk directly to Hitler, who immediately saw the light. The officialdom of the German General Staff objected to von Mannstein's idea of using the Ardennes Forest, because their data was a few years obsolete, and they thought it was still impassable by tanks.

Kahn draws an analogy of the French Maginot Line delusion to the American belief in 1941 that Pearl Harbor was safe from Japanese attack. Japan was in 1941 under strong pressure from American sanctions after Japan invaded China, a situation analogous to the sanctions on Russia after it invaded Crimea last year. Pearl Harbor is only 30-40 feet deep, whereas the admiralty textbooks of 1941 stated that torpedoes need 75-150 feet depth of water to operate reliably. Therefore, Naval expert **William D. Puleston** confidently guaranteed in 1941 that Pearl Harbor would never become a byword for vulnerability to surprise attack:

"The Pacific Fleet is at one of the strongest bases in the world - Pearl Harbor - practically on a war footing and under a war regime. There will be no American **Port Arthur."**

- William D. Puleston, *The Armed Forces of the Pacific*, Yale University Press, 1941, page 117.

Puleston's complacency was disproved soon after his textbook's publication by the Japanese Admiral Onishi, who developed special torpedoes that are effective in 30-40 feet of water.

Kahn in Figure 9 on page 481 analyzes whether the American Minuteman ICBM silo based missile system is vulnerable to a Pearl Harbor style surprise attack. Defense Secretary Robert McNamara finally authorized that 1,000 Minutemen be built as Kahn in 1960 (prior to the Kennedy administration) assumes, although some in the USAF wanted more Minutemen. Today, only 450 of those 1,000 are still in operation but Kahn argued that 99% of the original 1,000 Minutemen ICBMs could be wiped out by 6,000 Russian warheads, each having a 50% silo kill probability:

"Figure 9 shows that having a retaliatory capability distributed over a thousand fixed points, such as some proposals for Minuteman, may not be sufficient to deter a determined enemy."

In Figure 8 on page 469, Kahn relates missile accuracy (CEP radius) to warhead yield, reliability and target kill overpressure. Since then, missile accuracy has improved but MIRV technology has reduced yield, while silos have had improved shock absorbers to reduce vulnerability, increasing silo survival the 1960 value of 100 psi, which is near the edge of the crater, to today's many thousands of psi, so that a surviving silo sticks up like a concrete chimney, well inside the excavated bowl of the crater (silo doors and hydraulics are designed to take the impact from the debris crater fall-back, as well as surviving all other nuclear effects). Kahn's figure 10, based on Dr Harold Brode's RAND Corporation report P-1951, *Ground Support Systems Weapons Effects*, shows that a silo hardened to withstand 1,000 psi has a 90% chance of surviving a 5 megaton surface burst, if the missile accuracy CEP = 1 nautical mile. Most MIRV warheads now are less one tenth of that yield (i.e. under 500 kt), and silos have been hardened to withstand higher pressures, which largely offsets the improvements in missile accuracy.

For hard targets that withstand peak overpressures over about 100 psi - note that 1 psi = 6.9 kPa in metric units - peak overpressure is directly proportional to yield. Therefore, reducing a weapon yield from 5 Mt to 500 kt is equivalent to reducing the peak overpressure at the CEP radius by a similar factor of 10. For very high peak overpressures, the most probable overpressure on the target is inversely proportional to the cube of the CEP radius. Therefore, doubling the missile accuracy, i.e., halving the CEP radius, causes the target to be most likely subjected to an 8-fold increase in peak overpressure. This is simply due to the fact that such high peak overpressures are inversely proportional to the cube of distance from ground zero: the peak overpressure at 10 feet from a nuclear explosion is 1,000 times higher than at 100 feet radius (ignoring minor effects from the loss of energy by thermal radiation from the shock front, and the changing relative contributions from the bomb case debris shock and pure air blast shock). The actual survival probability is:

$$S = \left(\frac{1}{2}\right)^{\left(\frac{nR^2}{C^2}\right)}$$

where S is survival probability, n is number of warheads actually detonating on the target, R is the radius of the peak overpressure that is sufficient to destroy the target, and C is the CEP (Circular Error Probability) radius for the warhead's delivery system.

Nuclear disarmament, such as the decrease from 1,000 to 450 ICBMs, even taking account of similar verified Russian stockpile disarmament, is increasing the statistical uncertainty of a war. Disarmament to give a smaller nuclear stockpile increases the uncertainty in the number of missiles that survive a first strike (since the standard deviation in percent is 100 divided into the square root of the sample size), so nuclear war increasingly becomes a gamble like Russian Roulette, undermining the credibility of our deterrent policy.

WHY HERMAN KAHN'S ON THERMONUCLEAR WAR CONTINUES TO BE IGNORED

It's a poorly edited book, nearly 700 pages of hard to read, disorganized or badly fragmented nuggets, which could be cut down to less than 70 pages of well-organized, readable analysis to defend the validity of the cost-effective, nuclear deterrent against provocations that escalate into conventional war (not just a deterrent against other nuclear weapons), and more especially, a defence for making the nuclear deterrent credible for military rather than civilian purposes, by using effective, low-cost civil defense.

Unfortunately, Kahn's muddled presentation allowed lawyer James Newman of *Scientific American* to take bits of the book out of context and then falsely condemn it as warmongering evil. For example, Kahn's defense for his controversial and poorly designed Table 3, *Tragic but distinguishable postwar states*, which correlates casualties to recovery times, and includes the question "Will the survivors envy the dead?" was attacked by Newman's March 1961 review of the book.

Kahn defends that chapter 1 table effectively only in an appendix near the end of the book (on page 626) of *On Thermonuclear War*, not on the page that carries the table, and **Newman later confessed to only reading the first 200 pages of the book when writing his review, so he ignored the defense Kahn gives!**

CIVIL DEFENSE—1961

TUESDAY, AUGUST 1, 1961

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON MILITARY OPERATIONS OF THE COMMITTEE ON GOVERNMENT OPERATIONS

Mr. ROBACK. Mr. Kahn, you made reference to Mr. Newman's comment. Now, that was a review of your book. I recall reading at one time that he referred to your voluminous opus as a tract for mass murder. What do you suppose that meant?

Mr. KAHN. What was the question?

Mr. ROBACK. He referred to it as a tract for mass murder. Does that impute a desire to see people destroyed?

Mr. KAHN. Well, the review, I thought, was a rather extreme review.

Mr. MORSE. Is this the review that denied your existence?

Mr. KAHN. Yes, which was the most unkind cut of all. My first reaction was to put on 10 pounds. [Laughter.]

Newman's reaction to my book was an extreme form of a fairly common reaction and remarkable only in that it got published in a respectable magazine. It was common not only in the violence and emotion of his reaction but also, as far as I know, in that Mr. Newman did not read the book. It has been reported to me that he has said that he read less than 200 pages.

Mr. ROBACK. You will have to admit it is not an easy job.

U.S. Congressional Hearings, *Civil Defense - 1961*, page 184:

Mr Roback: "Mr Kahn, you made a reference to Mr Newman's comment. ... I recall ... he referred to your voluminous opus as a tract for mass murder. What do you suppose that meant?" ...

Mr Kahn: "Well, the review, I felt was a rather extreme review. ... My first reaction was to put on 10 pounds [laughter]. Newman's reaction to my book ... was remarkable only in that it got published in a respectable magazine. ... Mr Newman did not read the book. It has been reported to me that he has said that he read less than 200 pages."

Kahn's effective and damning defense of the inclusion of Table 3 which Newman so hated, only occurs much later, on page 626 of *On Thermonuclear War*, within Appendix IV, *A proposed civil defense program*:

"There should be the creation of feasible *evacuation measures, improvisation of fallout protection* ... Are these things worth the effort? **Anybody who can make the distinctions in Table 3, Tragic but Distinguishable Postwar States, will think they are.**" (This should have been printed directly under Table 3 to avoid confusion. But then, I guess Newman would have ignored the truth, as he did with the rest of his reckless and civil defense damaging tantrum.)

This Appendix IV also recommended \$100 million expenditure on radiation meters for fallout shelters in the basement of public buildings made of concrete or masonry, \$150 for identifying and utilizing such existing structures for fallout protection in nuclear war, and research on decontamination, etc., and was based on **Kahn's 1957 RAND Corporation report RM-2206-RC, *Some Specific Suggestions for Obtaining Early Non-Military Defense Capabilities*** The problem was that although President Kennedy's administration implemented Kahn's proposals for fallout shelters with radiation meters in public buildings in 1961, he did not implement the first demand of Kahn, which was for sensible plans for the pre-war evacuation of cities. This error of judgement soon contributed to a crisis in October 1962, because it limited Kennedy's options and forced him to concede that there was no evacuation plan available on 22 October

1962 for cities within reach of the Russian IRBMs shipped to Cuba. Thus, Kennedy was forced - by the paucity of options at his disposal - into his TV speech that day which threatened an all-out nuclear war if just a single IRBM was fired from Cuba by accident. By preventing passive defense, Kennedy was forced into committing to a more risky offensive threat to bolster deterrence, in the hope it would coerce the Russians into reducing the risk of an accidental or unauthorized IRBM launch from Cuba.

See, for example, [Dr William Chipman's Defense Civil Preparedness Agency report, Civil Defense for the 1980s - current issues](#), page 47, Civil defense and the Cuban missiles crisis, where Kennedy's concern during the Cuban Missiles Crisis that there was no effective Kahn type evacuation plan, limited his options to offensive threats:

*Prepared by
Dr. William Chipman
July 13, 1979 DCPA*

CIVIL DEFENSE FOR THE 1980's--CURRENT ISSUES

ABSTRACT: This paper reviews the civil defense (CD) debate as it has been reflected since 1976 in studies, Congressional Hearings, DoD reports, journals, and other open sources (no significant facts, policies or views are classified). The paper reviews in some detail the debate on the relationship of CD to the strategic balance, and outlines the Executive Branch studies on U.S. and Soviet CD that led to Presidential Decision 41. PD 41 makes it clear that CD is a factor to be taken into account in assessing the strategic balance: The U.S. program is to "enhance deterrence and stability," and to "reduce the possibility that the Soviets could coerce us" in a crisis. The paper also assesses programs that could give effect to the PD 41 policies, and concludes that a program of the type recommended by the Secretary of Defense (averaging \$230M annually for FY's 1980-1984) could implement these policies, whereas a program at the \$100 or \$110M level cannot.

page 47:

Civil Defense and the Cuban Crisis

There is a final point worth making with respect to civil defense and crises. In a 1978 interview, Steuart L. Pittman, who was Assistant Secretary of Defense for Civil Defense in 1961 to 1964, pointed out:

[I]t is interesting that President Kennedy personally raised the civil defense question during the Cuban crisis. He was considering conventional military action against Cuba to knock out the missile sites. I understand he was the only one of the "Committee" to raise the issue of civil defense, which tells us something. He asked whether it would be practical to evacuate Miami and other coastal cities in Florida. . . . I was called into the marathon crisis meeting and had to tell him that it would not be practical; we did not have any significant evacuation plans. . . . The President dropped the idea, but shortly after the crisis was over, his personal concern over his limited civil defense options led him to sign a memorandum directing a significant speedup in the U.S. civil defense preparations. (Emphasis added.)93/

The point Kennedy made was that, with a temporary civil defense evacuation of Miami and other cities within range of the **SS-4 (or R-12 in Russian nomenclature) missiles**, he could have ordered an invasion of Cuba without risking civilians in the event that some nuclear missiles were launched during the invasion. By ruling out this civil defense possibility, Kennedy felt forced into threatening an all-out retaliation against Russia if a missile was launched. Thus, in part because James Newman and his *Scientific American* publishers, and their anti-debate, anti-liberal friends (cloaked in the false, lying colours of liberalism!), ***had falsely dismissed or ignored the Kahn's argument as taboo warmongering, the Cuban missiles crisis risked escalating into WWII rather than just a limited invasion of Cuba.***

Kahn explains on page 369 of *On Thernonuclear War* that the use of dogmas to close down discussions of taboo alternatives like civil defense leads to rigid war plans of the sort in place in Germany in 1914 when WWI broke out:

"The rigidity of the war plans. In 1914 this occurred because they were so complicated that the general staffs felt that they could not draw up more than one. This single war plan was then made even more rigid because it depended on such detailed railroad schedules. ... They [groupthink planners] want to examine and plan for only the most obvious one, and ignore the others. ... Even more than in 1914, governments of our day are likely to be

ignorant of the technical details of war ... it is almost impossible to get people interested in the tactics and strategy of thermonuclear war."

Furthermore, even when there is an interest in nuclear war effects, it is constrained to follow set paths like either a Church service or quantum field theory seminar, in which objective injections and even mere questions from free thinking individuals of the congregation are automatically censored or ignored on some false grounds such as alleged rudeness (often just a lack of respectful worship or of diplomacy) or heresy:

"There is another way in which we can have too narrow a focus. We can refuse to entertain or consider seriously ideas which seem to be 'crack-pot' or unrealistic, but which are really just unfamiliar. In more casual days one could dismiss a bizarre-sounding notion with a snort or comment about being impractical or implausible. Things moved slowly, and no real harm was done if a new idea took several years to prove itself. Indeed, allowing a notion to stay around for several years ... meant that most of the 'half-baked' ones got scuttled and never had to be considered seriously at all. The consequent saving on the use of both time and 'gray matter' must have been enormous." (The bigoted, abusive and LAZY folk are recklessly incompetent and must be fired if we are to make progress, rather than simplistically *killing off* ideas that *need work*.)

- Herman Kahn, *On Thermonuclear War*, page 125.

Kahn also makes the point on page 414 that even if you have adequate warning and sensible plans, they can backfire under realistic conditions. His example is the Japanese attack on the Philippines, 9 hours after the surprise attack on Pearl Harbor, Hawaii, 7 December 1941. General MacArthur was warned immediately after Pearl Harbor was attacked, and responded by getting the entire fleet of B-17 bombers airborne to resist bombing on their air bases. Unfortunately, the Japanese attack on the Philippines, which was scheduled for dawn (which occurs 3.5 hours after dawn in Hawaii) was unexpectedly delayed for 6 hours due to fog at the Japanese home base. By the time the Japanese bombed the American air bases in the Philippines, the American B-17s had returned for refuelling, and were caught on the ground. This demonstrates that straightforward countermeasures can sometimes fail, due to bad luck (fog in this case). **A similar situation occurred in Hiroshima, where the air raid warning was not sounded before the bomb went off, because the commander was away at breakfast. There were plenty of air raid shelters in Hiroshima which survived the effects of nuclear weapons, deflecting the blast and absorbing most of the radiation.**

Kahn also points out how **secrecy can backfire**, as in the case where poorly designed American torpedoes were protected from demands for rapid improvement by official U.S. Navy secrecy during WWII:

"Secrecy, a necessary concern of the armed forces, became such a fetish that measures designed to protect a device from enemy eyes actually hid its defects from those who made the regulations. Ironically, some of those defects were already known to the foreign powers ..."

- Buford Rowland and William B. Boyd, *U.S. Navy Bureau of Ordnance in World War II*, U.S. Department of the Navy, 1953.

Similar questions were raised against the secrecy of the design and capabilities of "clean" nuclear weapons, undermining their usefulness when the facts about the reduction of fallout dose rates were secret in nuclear weapon test report WT-1317, *Characterization of Fallout, Operation Redwing*:

"As the nation's most famed weapons expert, Teller had access to secret atomic data which greatly enhanced his ability to be persuasive in public, while not disclosing the data pertinent to his argument. He could always, if challenged, retreat to a sanctuary of nondiscussable information."

- Dr Ralph E. Lapp, *The New Priesthood: The Scientific Elite and the Uses of Power*, Harper, New York, 1965, page 138.

Lapp's 1965 book *The New Priesthood* begins (page 1) with the following quotation from President Woodrow Wilson, on the dangers of dictatorship by secretive expert advisers, like a Manhattan project:

"What I fear is a government of experts. God forbid that in a democratic society we should resign the task and give the government over to experts. What are we for if we are to be scientifically taken care of by a small number of gentlemen who are the only men who understand the job? because if we don't understand the job, then we are not a free people."

Lapp then points out how he saw science change during WWII from a poorly funded, low-prestige business of struggling individuals pursuing unpopular technical questions to find the truth, into today's "big science" of groupthink-dominated government (taxpayer)-funded teams of aim-biased technicians, seeking wealth and prestige, paying only lip-service to freedom and objectivity:

"Today ... the lone researcher is a *rara avis* (rare bird); most scientists team up to work together toward agreed upon objectives [not an unbiased agenda]. ... A single experiment may involve a hundred scientists ... the research is no longer unspecified as to objective ... democracy faces its most severe test in preserving its traditions in an age of scientific revolution. ... scientists in key advisory positions wield enormous power. The ordinary

checks and balances in a democracy fail when the Congress, for example, is incapable of intelligent discourse on vital issues. The danger to our democracy is that national policy will be decided by the few acting without even attempting to enter a public discourse ... our democracy will become a timocracy. ... Even if no formal secrecy is invoked by the government, an issue might as well be classified 'secret' if the people in a democracy are incapable of carrying on an intelligent discussion of it. ... The danger is that a new priesthood of scientists may usurp the traditional roles of democratic decision-making"

- Dr Ralph E. Lapp, *The New Priesthood: The Scientific Elite and the Uses of Power*, Harper, New York, 1965, pages 2-3.

Lapp on page 8 quotes **President Thomas Jefferson**:

"To furnish the citizens with full and correct information is a matter of the highest importance. If we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion by education."

Education in fact, not groupthink indoctrination nor the propaganda substitutes for fact used by dictatorships.

Lapp on page 14 quotes **President Dwight Eisenhower's 17 January 1961 farewell address**:

"Today the solitary inventor, tinkering in his shop, has been overshadowed by task forces of scientists ... In the same fashion, the free university, historically the fountainhead of free ideas and scientific discovery, has experienced a revolution ... Partly because of the huge costs involved, a government contract becomes virtually a substitute for intellectual curiosity. ... The prospect of domination of the nation's scholars by federal employment, project allocations, and the power of money is ever present - and is gravely to be regarded."

Lapp on page 16 quotes **Dr Alvin Weinberg** (director of Oak Ridge National Laboratory, 1955-1973):

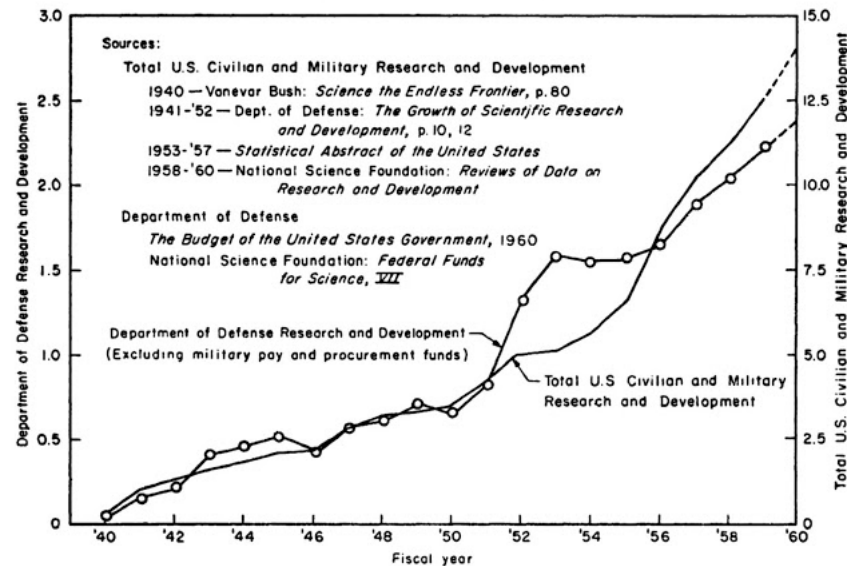
"I do believe that big science can ruin our universities, by diverting the universities from their primary purpose and by converting our university professors into administrators, housekeepers and publicists."

Alvin Weinberg expanded on his critique of "big science" in his **1967 book, *Reflections on Big Science***.

We quoted Alvin Weinberg's analogy of populist anti-nuclear pseudoscientific rants to witch hunts, in a previous post (linked here). Weinberg wrote *Appendix B: Civil Defense and Nuclear Energy*, pages 275-7 of *The Control of Exposure of the Public to Ionizing Radiation in the Event of Accident or Attack*, Proceedings of a Symposium Sponsored by the National Council on Radiation Protection and Measurements (NCRP), April 27-29, 1981, Held at the International Conference Center, Reston, Virginia. (The proceedings were published on May 15, 1982, by the U.S. National Council on Radiation Protection and Measurements, Bethesda, Md.):

"That people will eventually acquire more sensible attitudes towards low level radiation is suggested by an analogy, pointed out by William Clark, between our fear of very low levels of radiation insult and of witches. In the fifteenth and sixteenth centuries, people knew that their children were dying and their cattle were getting sick because witches were casting spells on them. During these centuries no fewer than 500,000 witches were burned at the stake. Since the witches were causing the trouble, if you burn the witches, then the trouble will disappear. Of course, one could never be really sure that the witches were causing the trouble. Indeed, though many witches were killed, the troubles remained. The answer was not to stop killing the witches - the answer was: kill more witches. ... I want to end on a happy note. The Inquisitor of the south of Spain, Alonzo Frias, in 1610 decided that he ought to appoint a committee to examine the connection between witches and all these bad things that were happening. The committee could find no real correlation ... So the Inquisitor decided to make illegal the use of torture to extract a confession from a witch. ... it took 200 years for the Inquisition to run its course on witches."

Annual expenditures on research and development
(billions of dollars)



Above: Herman Kahn's graph of the massive rise in U.S. government taxpayer funded research and development from 1940-1960, about 20% of which is military and 80% is civilian. (Lapp states on page 45 of *The New Priesthood* that in 1939 the entire U.S. Federal research and development budget was just \$50 million, mostly for agricultural science, with a small portion for ship studies at the Naval Research Laboratory, and just \$2 million for physics research, by the National Bureau of Standards.) The Manhattan project which resulted in the first nuclear weapons used in 1945, was reported to have cost \$2 billion from 1942-1945. Thus began "big science". By 1960s, six times as much as that was being spent *per year*. Essentially all of this expenditure is decided in advance by timetable and grant-proposal dominated groupthink bureaucracy and officialdom, not by a completely unbiased search for the truth by individuals who are free to follow the evidence. You cannot find the unknown by a search governed by planned timetables.

Lapp quotes an editorial by *Science* editor **Dr Philip Abelson** on page 30 of *The New Priesthood*:

"The witness in questioning the wisdom of the establishment pays a price and incurs hazards. He is diverted from his professional activities. He stirs the enmity of powerful foes. He fears that reprisals may extend beyond him to his institution. Perhaps he fears shadows, but ... prudence seems to dictate silence."

The remainder of Lapp's 1965 *The New Priesthood* (which is not cited in Richard Rhodes' *The Making of the Atomic Bomb* bibliography) is a review of the Manhattan Project and why the nuclear weapons were dropped on Hiroshima and Nagasaki, from Lapp's perspective of the Metallurgical Laboratory in Chicago (Lapp worked there, having a PhD on cosmic rays), where the anti-nuclear bombing Franck Committee was founded on 2 June 1945, whose final report on 11 June 1945 recommended that nuclear weapons should not be dropped on civilian targets to cause mass destruction since the military advantage would be:

"outweighed by the ensuing loss of confidence and by a wave of horror and repulsion sweeping over the rest of the world and perhaps even dividing public opinion at home. ... a demonstration of the new weapon might best be made, before the eyes of representatives of all the United Nations, on the desert or a barren island. ... After such a demonstration the weapon might perhaps be used against Japan if the sanction of the United Nations (and of public opinion at home) were obtained, perhaps, after a preliminary ultimatum to Japan to surrender or at least to evacuate certain regions as an alternative to total destruction."

Lapp adds on page 80 that, while he was assistant to the director of the Manhattan Project's Metallurgical Laboratory, based at Chicago University, on 12 July 1945 he made a poll of 150 Manhattan project scientists there about how the bomb should be dropped. This poll was done by Ralph Lapp on behalf of Arthur Compton, because the Manhattan Project military commander, General Groves, had been confronted by Leo Szilard (based at the Metallurgical Laboratory) on the use of nuclear weapons to end the war with Japan, and had asked Compton for a poll be done to find the consensus in Chicago after Szilard's agitation for an anti-nuclear bombing petition.

Only 15% of Lapp's poll votes went for the maximum destruction option actually used at Hiroshima and Nagasaki, 46% for a demonstration explosion in Japan before

"full use" of the weapon (basically the Franck report recommendation, but without United Nations procrastination), 26% wanted Japan to attend a nuclear test within the United States (such as the Trinity test, held four days later on 16 July), 11% wanted no military use at all, just a public demonstration for political deterrence of war, and 2% wanted it to be kept completely secret and never used for any purpose.

Ironically, that would option would have spelled disaster, since spies like Drs. Fuchs ensured that Stalin already knew far more than the American pseudo-democracy of Joe Public about nuclear weapons! (The great tragedy of nuclear weapons secrecy is that, as always, only the “free public” are kept in the dark, not the dictators with their big spy networks!)

Leo Szilard was a chemist who had in 1933 applied the chemical concept of an explosive chain reaction to the discovery of the neutron the previous year, coming up with the idea of finding a neutron chain reaction which would explosively release nuclear energy (he had no idea until 1939 that uranium-235 was the key). Szilard in August 1939 convinced Einstein to write to President Roosevelt to request government research on nuclear weapons. During the Manhattan Project, as Richard Rhodes explains (Rhodes makes Szilard the hero of his book *The making of the atomic bomb*, just as Lapp does in *The New Priesthood*), Szilard used his knowledge of chemical engineering to overcome the boron-contaminated graphite moderator problem in the first nuclear reactors. (Electrodes containing boron, which is a strong absorber of neutrons, were used to produce the graphite moderators for early nuclear reactor research. The boron contamination spoiled the carbon moderator, by absorbing the neutrons. The same problem occurred to Heisenberg's nuclear bomb research in Germany, but Heisenberg failed to find that boron contamination was causing the problem, and so he discarded the cheap carbon moderator in preference for expensive heavy water containing deuterium, which was distilled from ordinary water very slowly and at great expense using hydroelectric electricity in occupied Norway. Commando raids were made to destroy some of the heavy water, so Germany was unable to make nuclear weapons in World War II.)

After that \$2 billion American investment, Szilard had doubts about whether it was such a good idea to leave the use of nuclear weapons to politicians. This infuriated those who just wanted to every means available to end the war as soon as possible. U.S. War Secretary Henry Stimson was planning for an invasion of Kyushu on 1 November 1945 and an invasion of Honshu in 1946, using 5,000,000 American servicemen, at least a million of whom were not expected to return. Although many revisionist critics have claimed that Japan would have surrendered regardless of nuclear weapons use, before such an invasion occurred, this is just speculative conjecture and there is no proof of it. Similarly, throughout the Vietnam, predictions were made that the Vietcong were perpetually on the point of defeat, even just before the Tet Offensive in 1968. Japan had invested everything in the war and politically needed a strong excuse to justify surrender.

Lapp on page 82 quotes Admiral Ernest J. King, who was against dropping nuclear weapons, preferring a naval blockade to starve Japan into surrender:

"The President ... appeared to believe that many thousands of American troops would be killed in invading Japan ... the [nuclear weapons] dilemma was an unnecessary one, for had we been willing to wait, the effective naval blockade would, in the course of time, have starved the Japanese into submission through lack of oil, rice, medicine, and other essential materials."

So there were military commanders who believed in alternatives to bombing cities with nuclear weapons. Admiral King's alternative of starving the whole of Japan into submission was a tough one, however, which probably explains why it has not been hyped by the anti-nuclear people, since although the idea might perhaps appease the conscience of some elite scientist, the amount of suffering might conceivably have been greater. Nobody really knows for sure when surrender would have occurred if nuclear weapons had not been used. Dr Lapp points out on page 83 that 2 million buildings had already been destroyed in 66 Japanese cities by conventional bombing without surrender. Groves discusses Leo Szilard and Joseph Rotblat (who left the project as soon as Germany was defeated) in his 1962 book *Now It Can Be Told*:

"To achieve surprise was one of the reasons we tried so hard to maintain our security. ... A little later some of the scientists began to express doubts about the desirability of using the bomb against Japan. A number of these men had come to the United States to escape racial persecution under the Hitler regime. To them, Hitler was the supreme enemy and, once he had been destroyed, they apparently found themselves unable to generate the same degree of enthusiasm for destroying Japan's military power."



Above: Herman Kahn was not wiped out of existence by James Newman's 1961 *Scientific American* ill-informed hate attack on his unread book *On Thermonuclear War*. Instead, Kahn set up the nonprofit Hudson Institute which undertook research on ABM, civil defense, and futurology, leading to a further clash with groupthink pessimist ideology when Kahn, with co-authors William Brown and Leon Martel (photo below; Kahn is on far right) wrote *The Next 200 Years*.



Kahn's *The Next 200 years* confounded the pessimists and communists who predicted that capitalism would destroy humanity, if not by war then by a "population

bomb" that would pollute the world and destroy its resources, leading to famine and starvation. Kahn argued that instead of capitalism making everyone poorer and more hungry, the opposite was occurring and would continue to occur until the population stabilized at 15 billion around the year 2176:

(1) In 1776, when the United States was founded and Adam Smith's *Wealth of Nations* was published, the world had 750 million people, a gross world product of \$150 billion (all values are in 1975 dollars, to avoid corrections for inflation), thus \$200 per person.

(2) In 1976, the Bicentennial of the United States (which was founded upon gaining Independence in 1776), there were 4.1 billion people generating a gross world product of \$5.5 trillion, thus \$1,300 per person on earth, an increase by a factor of 6.5 from the state of the world 200 years earlier. Furthermore, democracy was evening out the wealth by the spread of affordable innovations and food nearly everyone could afford, reducing extreme poverty.

(3) Extrapolating 200 years to 2176, Kahn and co-authors predicted on page 6 that the world's population would peak at 15 billion people, with a gross world product of \$300 trillion, and thus an average of \$20,000 per person on earth (far more uniformly distributed than in the pre-democratic world of kings and slaves). This is an increase in the wealth per person by a factor of 15 from the 1976 value, and a factor of 100 larger than the situation in 1776 when the United States was founded!

Industrialization and capitalism, Kahn points out on page 48, are even applauded by Karl Marx and Friedrich Engels in the following quotation from *The Communist Manifesto* (Penguin, 1967, pages 84-85):

"The bourgeoisie, by the rapid improvement of all instruments of production, by the immensely facilitated means of communication, draws all, even the most backward, nations into civilization. The cheap prices of its commodities are the heavy artillery with which it batters down all Chinese walls, with which it forces the underdeveloped nations' intensely obstinate hatred of foreigners to capitulate. ... The bourgeoisie, during its rule of scarcely one hundred years, has created more massive and more colossal production forces than have all preceding generations together. Subjection of nature's forces to man, machinery, railways, electric telegraphs, clearing of whole continents for cultivation, canalization of rivers, whole populations conjured out of the ground - what earlier century has even a presentiment that such production forces slumbered in the lap of social labour?"

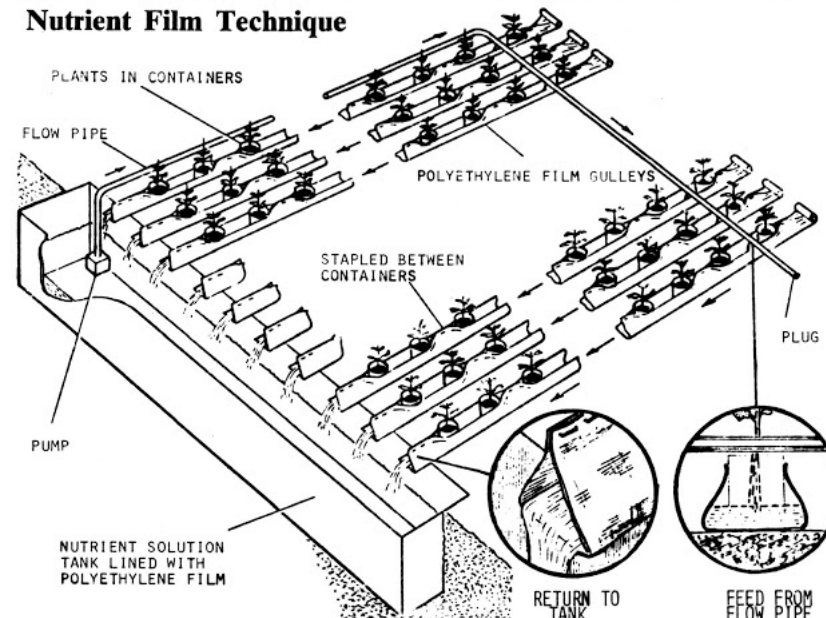
Kahn and his Hudson Institute co-authors justified Marx and Engel's praise of capitalism by pointing out, on pages 130-131 of *The Next 200 years* that since in 1976 three grain crops annually each yielded 12 metric tons per hectare, it followed that in 2176 crops over 2 million square miles would be needed, but: "Six relatively unused areas - the Sahara desert, the Amazon basin, the Gobi desert, Saudi Arabia, Australia and the sea coasts of Chile and Peru - offer some 7.5 million square miles of excellent opportunities ... where large-scale sunshine is available. These lands alone [using hydroponic techniques of growing plants in simple plastic water irrigation tubes supplied by desalination plants, *see diagram below*] could produce more than three times the food requirements estimated ... for the world in 2176. ... hydroponic techniques have been shown capable of growing crops with less water, fertilizer and other inputs than needed in conventional agriculture, and of growing them unblemished and free of disease or insect attacks."



Above: a computer-optimised hydroponics farm by Fujitsu, completely safe from radioactive contamination, located just 60 miles from the Fukushima nuclear disaster waste storage pools which cracked and leaked radioactive strontium-90 into the ground water, which can potentially yield: "450 and 550 tons of vegetables per acre, compared to the average yield of 15 tons per acre from traditional farming".

FARMING TO BOOST CROP YIELDS AND DECREASE INSECTS, WHILE AVOIDING ROOT UPTAKE OF RADIOACTIVE FALLOUT

Nutrient Film Technique



Water used is desalinated, filtered sea water, free from fallout

SOURCE: A. J. Cooper, "Soil? Who Needs It?," *Vegetable Grower*, August 1974, p. 18.

Regarding the material damage due to a future thermonuclear war, Kahn and co-authors state on pages 219-220 of *The Next 200 Years*:

"It is true - though not often acknowledged - that even two enormously destructive wars did not appreciably slow the accelerating pace of industrial growth in this century. Nevertheless, one can hardly be so confident that the world could similarly overcome the effects of a war involving the widespread use of nuclear weapons, particularly if they were used in their most destructive modes (that is, more against civilian than military targets)."

Responding to the abuse of educational resources for the dissemination of communist agenda drive propaganda, Kahn correctly predicted on page 182: "increasing problems of ritualistic or pseudo-rationality and educated incapacity, as well as various reactions against rationality." He cynically defines "educated incapacity" in a footnote on page 22:

"By 'educated incapacity' we mean an acquired or learned inability to understand or see a problem, much less a solution."



A typical example of this that he gives is the tragic human cost of Rachel Carson's pseudo-scientific environmentalist scare mongering, documented on page 194 of Cy Adler's 1973 book *Ecological Fantasies*:

"Ceylon was one of the first Asiatic countries to ban DDT ... more than 2 million Ceylonese had malaria in the early 1950's when DDT was first introduced to control malarial mosquitoes. After 10 years of control, malaria had all but been eliminated in Ceylon. The country banned the pesticide in 1964. By 1968 over a million cases of malaria had appeared. Ceylon rescinded its ban on DDT in 1969."

Kahn then reviews the myths circulated over the genetic effects of radiation, and concludes that scare-mongering environmentalism about pollution causes more harm than good since it consistently ignores obvious feedback which reduces side effects, commenting on page 173: **"most predictions of damage hundreds of years from now tend to be incorrect because they ignore the curative possibilities inherent in technological and economic progress."**

Suppose you dropped a nuclear bomb on Hiroshima on 6 August 1945 and essentially all the air raid shelters, except a few substandard homemade ones near ground zero, survived and offered protection, but nobody was in them because the warning system failed. In that case, if you are sensible, you don't give up, you improve the

warning system. Also, the conversion of many older city centres from wooden to concrete construction prevents fire risks, not just because concrete won't burn, but because concrete buildings are taller and have good shadowing effects, since, as soon as you are a distance from ground zero that's a few times the fireball radius plus the burst height, the heat flash and most gamma rays (even after Compton scattering) are coming horizontally if the yield is low (as for terrorist threats and most MIRV warheads) so that the heat flash is emitted before significant fireball rise occurs, and so the radiations are mostly blocked by the intervening concrete buildings (like sunlight immediately after dawn or sunset). (Neutrons scatter over a much wider range of angles than Compton gamma ray scattering, but the lower floors in concrete buildings in densely built up cities offer substantial shielding from the scattered neutrons, not just the unscattered radiation.) This fact kills "nuclear winter" firestorm soot and also mass burns lies that rely on Glasstone and Dolan's misleading unobstructed desert analysis method, that completely ignores the modern concrete building skyline shielding of radiations, and the blast upward diffraction energy loss and damage attenuation.

posted by Nuclear Weapons Effects 4:01 p.m.  

6 COMMENTS:

At 4:02 p.m.,  Anonymous said...

The Right Honourable Jeremy Corbyn, MP, Labour Party Leader and potential next prime minister, is to become Vice President of the Campaign for Nuclear Disarmament:

<http://www.bbc.co.uk/news/uk-34558956> 17 October 2015

Labour's [Leader and potential next Prime Minister of the United Kingdom] Jeremy Corbyn to become CND vice-president ... Mr Corbyn joined CND as a teenager in 1966 and has long campaigned against the replacement of Trident. ... Currently, the government is spending [only]about 6% of its annual defence budget on Trident, the Ministry of Defence has confirmed ... Trident is reported to have a potential destructive power eight times that of the first atomic bomb, which is estimated to have killed 140,000 people, and to have maimed many more, when it was dropped by the United States on Hiroshima in Japan on 6 August, 1945."

[That's a CND-BBC scare-mongering lie because (1) equivalent megatonnage goes as two-thirds power of yield for blast or less than that for initial radiation, which is the predominant kill mechanism inside modern city buildings, and only scales as a very weak function of weapon yield, certainly not directly with yield, as the liars in the BBC always claim, along with CND liars who seem to want to encourage dictators to start a world war without us having protection through civil defense, and (2) Hiroshima's population were almost entirely in light wooden buildings or outdoors travelling to work or clearing firebreaks in wide streets: according to the table on median or 50% survival radii in Hiroshima in Glasstone and Dolan's 1977 Effects of Nuclear Weapons, in the lower floors of concrete buildings 50% survived at 0.12 mile ground range in Hiroshima, whereas for unwarned kids outdoors it was 1.3 miles. That means that concrete buildings can reduce median lethal areas calculated by Glasstone and Dolan's assumptions for people outdoors in the nude, by a factor of well over 100, reducing 140,000 killed by the 16 kt Hiroshima air burst to 1,400 killed if people are indoors in modern concrete city buildings or equivalent simple WWII type air raid shelters such as the indoor Morrison table or the outdoor buried Anderson which can be used in hilly areas with low water tables]

CND's general secretary Kate Hudson said Mr Corbyn's new role was a "fitting tribute to a very principled man [Marxist civil defense liar]with a lifelong commitment [mad delusional ranting paranoid religious fixation]to CND and the cause of nuclear disarmament". ... The group promises to "organise in every town, city and village to create a mass movement", but Mike Gapes, the Labour MP for Ilford South, has told the BBC he fears some members of the campaign have an agenda. ... However, a spokeswoman for Momentum said such fears were a misunderstanding, and she said it was "a positive, outward looking" organisation [like the deluded "pacifist" Clement Attlee's leadership of the Labour Party from 1935 onwards, when he naively and disastrously argued in the House of Commons that we must avoid an arms race to stop providing excuses for Hitler's Nazi rearmament]."

At 4:03 p.m.,  Deterrence said...

Based on the history of Labour Party Leader Clement Attlee's attitude to the the Nazi threat in 1935 (he ignored it and argued against keeping ahead of the Nazis), here is a simple forecast of what the "too little, too late" British media will have to report to the public, too late to stop disaster, in the near future:

CND VICE PRESIDENT JEREMY CORBYN OUTLAW'S CREDIBLE DETERRENT WEAPONS

- ☐ Dictators party in the streets, free to enslave the world and force their dogmas and indoctrination on everyone.
- ☐ Radical thinkers and social reformers locked up in lunatic asylums, Soviet-style, to prevent violence and terrorism
- ☐ Millions of arms workers and defense contractors lose jobs. Spin-off electronics, computing, and space industries close.
- ☐ Progress replaced by economic and scientific stagnation. A new dark ages dawning, with plagues and famine due to overpopulation.
- ☐ Invasions and ethnic cleansing holocaust activities are no longer stoppable. Thugs take over civilization.
- ☐ Carefully developed weapons deterrent technology replaced by old fashioned sticks, stones, drownings, burning at the stake, and starvation in filthy, cold, disease ridden concentration camps and Siberian salt mines.
- ☐ Egotistic politicians who instituted this tragedy are awarded Nobel Peace Prizes and saturation media propaganda.
- ☐ Thugs shout down reasoning folk, deleting their comments from blogs to pretend they don't even exist!
- ☐ War spin-offs like nuclear explosives science, relevant for low cost intergalactic Freeman Dyson's Project Orion (nuclear explosion powered spacecraft) are totally taboo.
- ☐ Dictators secretly stockpile arms like Germany in the 1920s and early 1930s, preparing to turn world into their own Evil Empire by the peaceful coercion Hobson choice question: "Do you want WAR or peace? It's your choice. Just remember, if you don't want peaceful invasion, we'll kill you. Speak up now, our invasion is about to begin!"

PHOTO: CND rally. CND's Jeremy Corbyn, MP, now Leader of the British Labour Party and potential next Prime Minister of the United Kingdom, joins the "Wrap up Trident" mass CND protest march in London. Jeremy Corbyn and hundreds of CND (Campaign for Nuclear Disarmament) protesters joined in encircling The Ministry of Defence building in London with a 'peace scarf' knitted by thousands of people against the Trident nuclear weapons system.

At 10:30 a.m.,  nige said...

Regarding "Sir Joseph Rotblat", there are strong parallels to "Sir Jimmy Saville" and in the way MILLIONS IF NOT BILLIONS of people were duped by his populist lies on nuclear weapons effects and his ignorance of civil defence, war realities, peace propaganda dangers before WWI and WWII, etc. This is why there will be WWII, for exactly the same weapons effects lying, anti-civil defence propaganda media spin. In the final analysis, it's not the SOLE FAULT of Sir Jimmy Saville who abused kids when presenting BBC TV live that THE BBC, THE PUBLIC, THE PRESS, THE CRIMINAL JUSTICE SYSTEM, THE POLICE, and supposedly HUMANE propaganda "child protection lobbies" all FAILED to stop that criminal monster.

They LOVED the criminal, just as most of the British media effectively spun anti-civil defence lies and anti-arms race lies, and thereby very effectively sided with Hitler until war broke out with Britain it a very poor state compared to Germany, in 1939. Whose FAULT is it? It's ultimately the fault of MANY people.

If "socialists" were really HONEST, not religious ranting liars who support, protect and defend monsters, they could point out the facts are not determined by a "bigoted peer-reviewed consensus science" or Soviet style propaganda, but by OBJECTIVE criticism. We live in an era where Joe Public, by being lazy and rewarding celebrities with attention regardless of the lies and bigotry they spin, tries to blame other people. If you vote in a pseudo "democratic" country that gives one vote every five years for a choice between two clones with the same budget and dogma, then you're asking for dictatorship for eternity. Only true democracy, which means OBJECTIVE DEBATES, not pseudo-debated between two parties with the same agenda, are needed before decisions can be made.

At 10:44 a.m.,  nige said...

The top result on Google for "The effects of nuclear weapons" is currently a Jeremy Corbyn CND lies page which falsely states:

"The heart of a nuclear explosion reaches a temperature of several million degrees centigrade. Over a wide area the resulting heat flash literally vaporises all human tissue. At Hiroshima, within a radius of half a mile, the only remains of most of the people caught in the open were their shadows burnt into stone."

- Lie. In fact, even at ground zero the thermal radiation only burned a thin surface layer. That is proved by the USSBS report 92 which I published years ago on Internet Archive, which Dr A. Frankenstein and other abusive lying evil folk simply ignore, deleting the facts from their lying, self-deluded, egotistic, money spinning tantrum blogs. The truth is that even people in modern buildings near ground zero survived without being vaporized: Glasstone shows that there was 50% survival in modern city buildings at just 0.12 mile, regardless of the thermal flash and the "firestorm". This message is taboo because it is a truth that criminals don't want to hear, accept, or think about.

"People inside buildings or otherwise shielded will be indirectly killed by the blast and heat effects as buildings collapse and all inflammable materials burst into flames. The immediate death rate will be over 90%. Various individual fires will combine to produce a fire storm as all the oxygen is consumed. As the heat rises, air is drawn in from the periphery at or near ground level."

- Complete lies, debunked by the declassified data I published years ago on internet archive at <https://archive.org/details/TheEffectsOfTheAtomicBombOnHiroshima>

25 years ago, I believed the myth I taught that if you tell the truth, you embarrass the devil into changing its lying propaganda. Well, CND will never stop publishing lies, and Joe Public, too lazy and biased by decades of dangerous delusions and propaganda from the USSR, "World Peace Council", "International Red Cross", CND, Conservative party, Labour Party, Socialist Party, Pseudo-Scientific American, New Yorker, New Scientist, Communist Party, and Halloween party, will continue to attack civil defence, safe and credible nuclear deterrence against military invasions, and all the humane lessons of REAL PEACE learned from the study of wars and genuine peacekeeping that actually deters wars, instead of creating them.

At 10:51 a.m.,  nige said...

"The International Red Cross has concluded that the use of a single nuclear weapon in or near a populated area is likely to result in a humanitarian disaster that will be "difficult to address". ... In the aftermath of the Chernobyl nuclear power explosion and fire in the Ukraine in 1986, radioactive rain fell over the next few days in a wide arc across Northern Europe, from Scandinavia to Scotland, Cumbria and Wales, a distance of over 1,700 miles from Chernobyl. **[BENEFICIALLY REDUCING CANCER DUE TO RADIATION HORMESIS AT LOW DOSE RATES, AS PROVED BY DR CHARLES SANDERS' 2010 book "RADIATION HORMESIS", Springer]** Nuclear weapons cause severe damage to the climate and environment on a scale incomparable to any other weapon. Research by the International Red Cross shows the effect of a 'limited' nuclear war involving 100 Hiroshima-sized bombs (i.e. less than half a per cent of the world's stockpile). The five million tonnes of soot produced by the ensuing fires would cause global temperature to fall by an average of 1.3C. The disrupted global climate would have an overwhelming impact on food production. The Red Cross estimates that a billion people around the world could face starvation as a result of nuclear war."

- <http://www.cnduk.org/campaigns/global-abolition/effects-of-nuclear-weapons>

- Organizations that lie about thermal transmission through modern concrete city skylines using Glasstone's open, unobstructed desert transmission curve, are wrong about firestorms. The International Red Cross supported the Nazis in effect, just like everybody else before WWII, so it's clear why their propaganda is cited by CND's rant.

At 10:57 a.m.,  nige said...

<https://archive.org/details/TheEffectsOfTheAtomicBombOnHiroshima>

Radiation Hormesis and the Linear-No-Threshold Assumption, by Dr Charles Sanders, Springer, 2010:

The author shows how proponents of the LNT assumption consistently reject, manipulate, and deliberately ignore an overwhelming abundance of

published data and falsely claim that no reliable data are available at doses of less than 100 mSv. The consequence of the LNT assumption is a radiophobia that is very costly in terms of lives and money.

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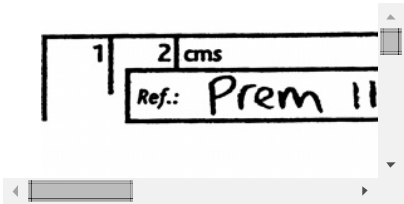
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CONVENTIONAL WARS HAVE KILLED TENS OF MILLIONS OF PEOPLE, NUCLEAR WEAPONS CAN RAPIDLY DETER THIS REAL THREAT TO PEACE WITH MINIMAL CASUALTIES. ‘During the critical period 8-15 February [1968], the U.S. command realized [that conventional] bombing was not sufficiently effective. ... The air campaign dropped over 110,000 tons of bombs and napalm on the area around Khe Sanh during the 77-day siege ... the most heavily bombed target in the history of conventional warfare.’ – W. C. Yengst, S. J. Lukasik, and M. A. Jensen, *Nuclear Weapons that went to War*, SAID report DSWA-TR-97-25, September 1998 (quoted in the 2015 book by the secret *Capabilities of Nuclear Weapons* editor, Dr Harold L. Brode, *Nuclear Weapons in the Cold War*, page 287). [British Nuclear Test Civil Defence Research](#)



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Radius of vulnerability (emergency risk criterion: 5% combat ineffectiveness)**Figure 54. Radii of Vulnerability.**

CATEGORY	PERSONNEL (LL) IN— (Based on Governing Effect)				
	Open	Open Foxholes	APCs	Tanks	Earth Shelter
Radii listed are distances at which a 5 percent incidence of effect occurs. HOB used is $60W^{1/3}$ meters.					
Yield (KT)					
(Distances are in meters)					
0.1	700	600	600	500	300
1	1200	900	900	800	500
10	3200	1300	1300	1250	900
20	4000	1500	1450	1400	1000
100	8000	1900	1800	1800	1400
200	12000	2000	1900	1900	1500
300	14000	2100	1950	1950	1600

**Protective factor = ratio of
area of effect in the open, to
area of effect for shelter**

**Example: for 300 kt, the protective
factor of open foxholes is equal to
 $(14,000)^2 / (2,100)^2 = 44$.**

Open	Open Foxholes	APCs	Tanks	Earth Shelter	Yield
1	1.36	1.36	1.96	5.44	0.1
1	1.78	1.78	2.25	5.76	1
1	6.06	6.06	6.55	12.6	10
1	7.11	7.61	8.16	16.0	20
1	17.7	19.8	19.8	32.7	100
1	36.0	39.9	39.9	64.0	200
1	44.4	51.5	51.5	76.6	300

Calculation of the injury-averting protective factors by simple open foxholes and earth shelters, as a function of weapon yield. Most countermeasures are relatively ineffective against tactical nuclear weapons (due to the predominating neutron radiation effect at 0.1 kt yield), but are extremely effective against strategic nuclear weapons with yields of 100, 200 and 300 kt (protective factors of 44 to 77).

The definition of protective factor used here is the factor by which casualties numbers are reduced.

Richard P. Feynman, 'This Unscientific Age', in *The Meaning of It All*, Penguin Books, London, 1998, pages 106-9:

'Now, I say if a man is absolutely honest and wants to protect the populace from the effects of radioactivity, which is what our scientific friends often say they are trying to do, then he should work on the biggest number, not on the smallest number, and he should try to point out that the [natural cosmic] radioactivity which is absorbed by living in the city of Denver is so much more serious [than the smaller doses from nuclear explosions] ... that all the people of Denver ought to move to lower altitudes.'

"If a man reads or hears a criticism of anything in which he has an interest, watch ... if he shows concern with any question except 'is it true?' he thereby reveals that his own attitude is unscientific. Likewise if ... he judges an idea not on its merits but with reference to the author of it; if he criticizes it as 'heresy'; if he argues that authority must be right because it is authority ... The path of truth is paved with critical doubt, and lighted by the spirit of objective enquiry... the majority of people have resented what seems in retrospect to have been purely matter of fact ... nothing has aided the persistence of falsehood, and the evils resulting from it, more than the unwillingness of good people to admit the truth ... the tendency continues to be shocked by natural comment, and to hold certain things too 'sacred' to think about. ... How rarely does one meet anyone whose first reaction to anything is to ask: 'is it true?' Yet, unless that is a man's natural reaction, it shows that truth is not uppermost in his mind, and unless it is, true progress is unlikely."

- Sir Basil Henry Liddell Hart, *Why Don't We Learn from History?*, PEN Books, 1944; revised edition, Allen and Unwin, 1972.

Civil defense countermeasures, to be taken seriously by the population, require the publication of solid facts with the scientific

evidence to support those facts against political propaganda to the contrary. Secrecy over the effects of nuclear weapons tests does not hinder plutonium and missile production by rogue states, but it does hinder civil defense countermeasures, by permitting lying political propaganda to go unopposed (see linked post, here).

Terrorists successfully prey on the vulnerable. The political spreading of lies concerning threats and the alleged ‘impossibility’ of all countermeasures, terrorizing the population in order to ‘justify’ supposedly pro-peace disarmament policies in the 1920s-1930s, resulted in the secret rearmament of fascist states which were terrorizing the Jews and others, eventually leading to World War II.

Political exaggerations about nuclear weapons effects today:

(1) encourage terrorist states and other groups to secretly invest in such weapons to use either for political intimidation or for future use against countries which have no countermeasures, and

(2) falsely dismiss, in the eyes of the media and the public, cheap relatively effective countermeasures like civil defense and ABM.

Therefore, doom-mongering media lies *make us vulnerable to the proliferation threat* today in two ways, just as they led to both world wars:

(1) Exaggerations of offensive technology and a down-playing of simple countermeasures such as trenches, encouraged belligerent states to start World War I in the false belief that modern technology implied overwhelming firepower which would terminate the war quickly on the basis of offensive preparedness: if the facts about simple trench countermeasures against shelling and machine guns during the American Civil War had been properly understood, it would have been recognised by Germany that a long war based on munitions production and logistics would be necessary, and war would have been seen to be likely to lead to German defeat against countries with larger overseas allies and colonies that could supply munitions and the other resources required to win a long war.

(2) Exaggerations of aerial bombardment technology after World War I led to disarmament ‘supported by’ false claims that it was impossible to have any defense against a perceived threat of instant annihilation from thousands of aircraft carrying gas and incendiary bombs, encouraging fascists to secretly rearm in order to successfully take advantage of the fear and vulnerability caused by this lying political disarmament propaganda.

Contrived dismissal of civil defense by Marxist “Cambridge Scientists Anti-War Group” bigots: (a) appeased war-mongering enemies, and (b) maximised war mortality rates. Idealism kills. Super effective, fully proof-tested, cheap civil defense makes nuclear deterrence credible to stop conventional war devastation by avoiding collateral damage, tit-for-tat retaliation and escalation.

Historically, it has been proved that having weapons is not enough to guarantee a reasonable measure of safety from terrorism and rogue states; countermeasures are also needed, both to make any deterrent credible and to negate or at least mitigate the effects of a terrorist attack. Some people who wear seatbelts die in car crashes; some people who are taken to hospital in ambulances, even in peace-time, die. Sometimes, lifebelts and lifeboats cannot save lives at sea. This lack of a 100% success rate in saving lives doesn't disprove the value of everyday precautions or of hospitals and medicine. Hospitals don't lull motorists into a false sense of security, causing them to drive faster and cause more accidents. Like-minded ‘arguments’ against ABM and civil defense are similarly vacuous.

‘As long as the threat from Iran persists, we will go forward with a missile system that is cost-effective and proven. If the Iranian threat is eliminated, we will have a stronger basis for security, and the driving force for missile-defense construction in Europe will be removed.’

- President Obama, Prague Castle, Czech Republic, 4 April 2009.

Before 9/11, Caspar Weinberger was quizzed by skeptical critics on the BBC News program *Talking Point*, Friday, May 4, 2001: *Caspar Weinberger quizzed on new US Star Wars ABM plans:*

‘The [ABM] treaty was in 1972 ... The theory ... supporting the ABM treaty [which prohibits ABM, thus making nations vulnerable to terrorism] ... that it will prevent an arms race ... is perfect nonsense because we have had an arms race all the time we have had the ABM treaty, and we have seen the greatest increase in proliferation of nuclear weapons that we have ever had. ... So the ABM treaty preventing an arms race is total nonsense. ...

‘You have to understand that without any defences whatever you are very vulnerable. **It is like saying we don't like chemical warfare - we don't like gas attacks - so we are going to give up and promise not to have any defences ever against them and that of course would mean then we are perfectly safe. ...**

‘The Patriot was not a failure in the Gulf War - the Patriot was one of the things which defeated the Scud and in effect helped us win the Gulf War.

One or two of the shots went astray but that is true of every weapon system that has ever been invented. ...

‘The fact that a missile defence system wouldn't necessarily block a suitcase bomb is certainly not an argument for not proceeding with a missile defence when a missile that hits can wipe out hundreds of thousands of lives in a second. ...

‘The curious thing about it is that missile defence is not an offensive weapon system - missile defence cannot kill anybody. Missile defence can help preserve and protect your people and our allies, and the idea that you are somehow endangering people by having a defence strikes me almost as absurd as saying you endanger people by having a gas mask in a gas attack. ...

‘President Bush said that we were going ahead with the defensive system but we would make sure that nobody felt we had offensive intentions because we would accompany it by a unilateral reduction of our nuclear arsenal. It seems to me to be a rather clear statement that proceeding with the missile defence system would mean fewer arms of this kind.

‘You have had your arms race all the time that the ABM treaty was in effect and now you have an enormous accumulation and increase of nuclear weapons and that was your arms race promoted by the ABM treaty. Now if you abolish the ABM treaty you are not going to get another arms race - *you have got the arms already there* - and if you accompany the missile defence construction with the unilateral reduction of our own nuclear arsenal then it seems to me you are finally getting some kind of inducement to reduce these weapons.’

Before the ABM system is in place, and afterwards if ABM fails to be 100% effective in an attack, or is bypassed by terrorists using a bomb in a suitcase or in a ship, civil defense is required and can be effective at saving lives:

‘Paradoxically, the more damaging the effect, that is the farther out its lethality stretches, the more can be done about it, because in the last fall of its power it covers vast areas, where small mitigations will save very large numbers of people.’

- Peter Laurie, *Beneath the City Streets: A Private Inquiry into the Nuclear Preoccupations of Government*, Penguin, 1974.

‘The purpose of a book is to save people [the] time and effort of digging things out for themselves. ... we have tried to leave the reader with something tangible – what a certain number of calories, roentgens, etc., means in terms of an effect on the human being. ... we must think of the people we are writing for.’

– Dr Samuel Glasstone, DSc, letter dated 1 February 1957 to Colonel Dent L. Lay, Chief, Weapons Effects Division, U.S. Armed Forces Special Weapons Project, Washington, D.C., pages 2 and 4, concerning the preparation of *The Effects of Nuclear Weapons*.



Glasstone and Dolan stated in *The Effects of Nuclear Weapons* (1977), Table 12.17 on page 546, that the median distance in Hiroshima for survival after 20 days was 0.12 miles for people in concrete buildings and 1.3 miles for people standing outdoors. Therefore the median distances for survival in modern city buildings and in the open differed by a factor of 11 for Hiroshima; the difference in areas was thus a factor of 11^2 or about 120. Hence, taking cover in modern city buildings reduces the casualty rates and the risks of being killed by a factor of 120 for Hiroshima conditions, contrary to popular media presented political propaganda that civil defence is hopeless. This would reduce 120,000 casualties to 1,000 casualties.

From Dr Glasstone's *Effects of Nuclear Weapons* (1962/64 ed., page 631): ‘At distances between 0.3 and 0.4 mile from ground zero in Hiroshima the average survival rate, for at least 20 days after the nuclear explosion, was less than 20 percent. Yet in two reinforced concrete office buildings, at these distances, almost 90 percent of the nearly 800 occupants survived more than 20 days, although some died later of radiation injury. Furthermore, of approximately 3,000 school students who were in the open and unshielded within a mile of ground zero at Hiroshima, about 90 percent were dead or missing after the explosion. But of nearly 5,000 students in the same zone who were shielded in one way or another, only 26 percent were fatalities. ... survival in Hiroshima was possible in buildings at such distances that the overpressure in the open was 15 to 20 pounds per square inch. ... it is evident ... that the area over which protection could be effective in saving lives is roughly eight to ten times as great as that in which the chances of survival are small.’

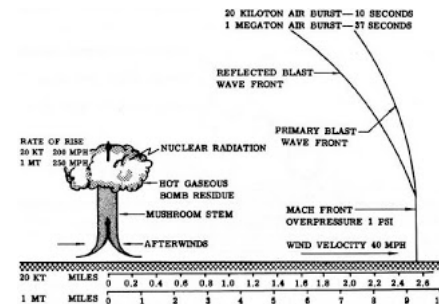
Lord Mayhew, House of Lords debate on Civil Defence (General Local Authority Functions) Regulations, Hansard, vol. 444, cc. 523-

49, 1 November 1983: ‘... if there had been effective civil defense at Hiroshima probably thousands of lives would have been saved and much human suffering would have been avoided. There is no question about it. ...’

Since the 1977 update by **Glasstone and Dolan**, **extensive new updates to EM-1 for a further revised edition** of *The Effects of Nuclear Weapons* have not actually been published with unlimited public distribution, due to President Carter’s 1979 executive order which transferred responsibility for civil defense from the jurisdiction of the U.S. Department of Defense’s Defense Civil Preparedness Agency to the new agency (which is not an Agency of the U.S. Department of Defense, and is not concerned with the analysis of nuclear weapons test effects data), the Federal Emergency Management Agency. However, the **February 1997 U.S. Department of Defense’s Defense Special Weapons Agency 0602715H RDT&E Budget Item Justification Sheet (R-2 Exhibit)** states that a revision of Glasstone and Dolan’s unclassified *Effects of Nuclear Weapons* was budgeted for 1997-9:

“FY 1997 Plans: ... Provide text to update Glasstone's book, *The Effects of Nuclear Weapons*, the standard reference for nuclear weapons effects. ... Update the unclassified textbook entitled, *The Effects of Nuclear Weapons*. ... Continue revision of Glasstone's book, *The Effects of Nuclear Weapons*, the standard reference for nuclear weapons effects. ... FY1999 Plans ... Disseminate updated *The Effects of Nuclear Weapons*.”

The new publications are either classified or unclassified with limited distribution restrictions (e.g., **Bridgman’s *Introduction to the Physics of Nuclear Weapons Effects*, which includes several chapters on nuclear weapons design to enable initial radiation outputs to be calculated precisely**) which prevents up-to-date basic nuclear effects information to justify civil defense against the latest nuclear threats from being widely disseminated; the books are printed for use only by government agencies. The problem with this approach is that widespread public understanding of the best information for civil defense countermeasures is prevented.



‘The evidence from Hiroshima indicates that blast survivors, both injured and uninjured, in buildings later consumed by fire [caused by the blast overturning charcoal braziers used for breakfast in inflammable wooden houses filled with easily ignitable bamboo furnishings and paper screens] were generally able to move to safe areas following the explosion. Of 130 major buildings studied by the U.S. Strategic Bombing Survey ... 107 were ultimately burned out ... Of those suffering fire, about 20 percent were burning after the first half hour. The remainder were consumed by fire spread, some as late as 15 hours after the blast. This situation is not unlike the one our computer-based fire spread model described for Detroit.’

- Defense Civil Preparedness Agency, U.S. Department of Defense, *DCPA Attack Environment Manual, Chapter 3: What the Planner Needs to Know About Fire Ignition and Spread*, report CPG 2-1A3, June 1973, Panel 27.

***The Effects of the Atomic Bomb on Hiroshima, Japan*, US Strategic Bombing Survey, Pacific Theatre, report 92, volume 2 (May 1947, secret):**

Volume one, page 14:

“... the city lacked buildings with fire-protective features such as automatic fire doors and automatic sprinkler systems”, and pages 26-28 state the heat flash in Hiroshima was only:

“... capable of starting primary fires in exposed, easily combustible materials such as dark cloth, thin paper, or dry rotted wood exposed to direct radiation at distances usually within 4,000 feet of the point of detonation (AZ).”

Volume two examines the firestorm and the ignition of clothing by the thermal radiation flash in Hiroshima:

Page 24:

“Scores of persons throughout all sections of the city were questioned concerning the ignition of clothing by the flash from the bomb. ... Ten school boys were located during the study who had been in school yards about 6,200 feet east and 7,000 feet west, respectively, from AZ [air zero]. These boys had flash burns on the portions of their faces which had been directly exposed to rays of the bomb. The boys’ stories were consistent to the effect that their clothing, apparently of cotton materials, ‘smoked,’ but did not burst into flame. ... a boy’s coat ... started to smoulder from heat rays at 3,800 feet from AZ.” [Contrast this to the obfuscation and vagueness in Glasstone, *The Effects of Nuclear Weapons*!]

Page 88:

“Ignition of the City. ... Only directly exposed surfaces were flash burned. Measured from GZ, flash burns on wood poles were observed at 13,000 feet, granite was roughened or spalled by heat at 1,300 feet, and vitreous tiles on roofs were blistered at 4,000 feet. ... six persons who had been in reinforced-concrete buildings within 3,200 feet of air zero stated that black cotton blackout curtains were ignited by radiant heat ... dark clothing was scorched and, in some cases, reported to have burst into flame from flash heat [*although as the 1946 unclassified USSBS report admits, most immediately beat the flames out with their hands without sustaining injury, because the clothing was not drenched in gasoline, unlike peacetime gasoline tanker road accident victims*]

“... but a large proportion of over 1,000 persons questioned was in agreement that a great majority of the original fires was started by debris falling on kitchen charcoal fires, by industrial process fires, or by electric short circuits. Hundreds of fires were reported to have started in the centre of the city within 10 minutes after the explosion. Of the total number of buildings investigated [135 buildings are listed] 107 caught fire, and in 69 instances, the probable cause of initial ignition of the buildings or their contents was as follows: (1) 8 by direct radiated heat from the bomb (primary fire), (2) 8 by secondary sources, and (3) 53 by fire spread from exposed [wooden] buildings.”

‘It is true that the Soviets have tested nuclear weapons of a yield higher than that which we thought necessary, but the 100-megaton bomb of which they spoke two years ago does not and will not change the balance of strategic power. The United States has chosen, deliberately, to concentrate on more mobile and more efficient weapons, with lower but entirely sufficient yield ...’ - President John F. Kennedy in his television broadcast to the American public, 26 July 1963.

‘During World War II many large cities in England, Germany, and Japan were subjected to terrific attacks by high-explosive and incendiary bombs. Yet, when proper steps had been taken for the protection of the civilian population and for the restoration of services after the bombing, there was little, if any, evidence of panic. It is the purpose of this book to state the facts concerning the atomic bomb, and to make an objective, scientific analysis of these facts. It is hoped that as a result, although it may not be feasible completely to allay fear, it will at least be possible to avoid panic.’

– **Dr George Gamow (the big bang cosmologist)**, **Dr Samuel Glasstone**, DSc (Executive Editor of the book), and **Professor Joseph O. Hirschfelder**, *The Effects of Atomic Weapons*, Chapter 1, p. 1, Paragraph 1.3, U.S. Department of Defense, September 1950.

‘The consequences of a multiweapon nuclear attack would certainly be grave ... Nevertheless, recovery should be possible if plans exist and are carried out to restore social order and to mitigate the economic disruption.’

- **Philip J. Dolan**, editor of *Nuclear Weapons Employment* FM 101-31 (1963), *Capabilities of Nuclear Weapons* DNA-EM-1 (1972), and *The Effects of Nuclear Weapons* (1977), Stanford Research Institute, Appendix A of the **U.S. National Council on Radiological protection (NCRP) symposium *The Control of Exposure to the Public of Ionising Radiation in the Event of Accident or Attack*, 1981.**

‘Suppose the bomb dropped on Hiroshima had been 1,000 times as powerful ... It could not have killed 1,000 times as many people, but at most the entire population of Hiroshima ... [regarding the hype about various nuclear "overkill" exaggerations] there is enough water in the oceans to drown everyone ten times.’

- **Professor Brian Martin, PhD (physics)**, ‘The global health effects of nuclear war’, *Current Affairs Bulletin*, Vol. 59, No. 7, December 1982, pp. 14-26.

In 1996, half a century after the nuclear detonations, data on cancers from the Hiroshima and Nagasaki survivors was published by D. A. Pierce et al. of the Radiation Effects Research Foundation, RERF (*Radiation Research* vol. 146 pp. 1-27; *Science* vol. 272, pp. 632-3) for 86,572 survivors, of whom 60% had received bomb doses of over 5 mSv (or 500 millirem in old units) suffering 4,741 cancers of which only 420 were due to radiation, consisting of 85 leukemias and 335 solid cancers.

‘Today we have a population of 2,383 [radium dial painter] cases for whom we have reliable body content measurements. . . . All 64 bone sarcoma [cancer] cases occurred in the 264 cases with more than 10 Gy [1,000 rads], while no sarcomas appeared in the 2,119 radium cases with less than

10 Gy.’

- Dr Robert Rowland, Director of the Center for Human Radiobiology, *Bone Sarcoma in Humans Induced by Radium: A Threshold Response?*, Proceedings of the 27th Annual Meeting, European Society for Radiation Biology, Radioprotection colloquies, Vol. 32CI (1997), pp. 331-8.

Zbigniew Jaworowski, 'Radiation Risk and Ethics: Health Hazards, Prevention Costs, and Radiophobia', *Physics Today*, April 2000, pp. 89-90:

‘... it is important to note that, given the effects of a few seconds of irradiation at Hiroshima and Nagasaki in 1945, a threshold near 200 mSv may be expected for leukemia and some solid tumors. [Sources: UNSCEAR, *Sources and Effects of Ionizing Radiation*, New York, 1994; W. F. Heidenreich, et al., *Radiat. Environ. Biophys.*, vol. 36 (1999), p. 205; and B. L. Cohen, *Radiat. Res.*, vol. 149 (1998), p. 525.] For a protracted lifetime natural exposure, a threshold may be set at a level of several thousand millisieverts for malignancies, of 10 grays for radium-226 in bones, and probably about 1.5-2.0 Gy for lung cancer after x-ray and gamma irradiation. [Sources: G. Jaikrishan, et al., *Radiation Research*, vol. 152 (1999), p. S149 (for natural exposure); R. D. Evans, *Health Physics*, vol. 27 (1974), p. 497 (for radium-226); H. H. Rossi and M. Zaider, *Radiat. Environ. Biophys.*, vol. 36 (1997), p. 85 (for radiogenic lung cancer).] The hormetic effects, such as a decreased cancer incidence at low doses and increased longevity, may be used as a guide for estimating practical thresholds and for setting standards. ...

‘Though about a hundred of the million daily spontaneous DNA damages per cell remain unrepaired or misrepaired, apoptosis, differentiation, necrosis, cell cycle regulation, intercellular interactions, and the immune system remove about 99% of the altered cells. [Source: R. D. Stewart, *Radiation Research*, vol. 152 (1999), p. 101.] ...

‘[Due to the Chernobyl nuclear accident in 1986] as of 1998 (according to UNSCEAR), a total of 1,791 thyroid cancers in children had been registered. About 93% of the youngsters have a prospect of full recovery. [Source: C. R. Moir and R. L. Telander, *Seminars in Pediatric Surgery*, vol. 3 (1994), p. 182.] ... The highest average thyroid doses in children (177 mGy) were accumulated in the Gomel region of Belarus. The highest incidence of thyroid cancer (17.9 cases per 100,000 children) occurred there in 1995, which means that the rate had increased by a factor of about 25 since 1987.

‘This rate increase was probably a result of improved screening [not radiation!]. Even then, the incidence rate for occult thyroid cancers was still a thousand times lower than it was for occult thyroid cancers in nonexposed populations (in the US, for example, the rate is 13,000 per 100,000 persons, and in Finland it is 35,600 per 100,000 persons). Thus, given the prospect of improved diagnostics, there is an enormous potential for detecting yet more [fictitious] "excess" thyroid cancers. In a study in the US that was performed during the period of active screening in 1974-79, it was determined that the incidence rate of malignant and other thyroid nodules was greater by 21-fold than it had been in the pre-1974 period. [Source: Z. Jaworowski, *21st Century Science and Technology*, vol. 11 (1998), issue 1, p. 14.]’

‘Professor Edward Lewis used data from four independent populations exposed to radiation to demonstrate that the incidence of leukemia was linearly related to the accumulated dose of radiation. ... Outspoken scientists, including Linus Pauling, used Lewis’s risk estimate to inform the public about the danger of nuclear fallout by estimating the number of leukemia deaths that would be caused by the test detonations. In May of 1957 Lewis’s analysis of the radiation-induced human leukemia data was published as a lead article in Science magazine. In June he presented it before the Joint Committee on Atomic Energy of the US Congress.’ – Abstract of thesis by Jennifer Caron, *Edward Lewis and Radioactive Fallout: the Impact of Caltech Biologists Over Nuclear Weapons Testing in the 1950s and 60s*, Caltech, January 2003.

Dr John F. Loutit of the Medical Research Council, Harwell, England, in 1962 wrote a book called Irradiation of Mice and Men (University of Chicago Press, Chicago and London), discrediting the pseudo-science from geneticist Edward Lewis on pages 61, and 78-79:

‘... Mole [R. H. Mole, *Brit. J. Radiol.*, v32, p497, 1959] gave different groups of mice an integrated total of 1,000 r of X-rays over a period of 4 weeks. But the dose-rate - and therefore the radiation-free time between fractions - was varied from 81 r/hour intermittently to 1.3 r/hour continuously. The incidence of leukemia varied from 40 per cent (within 15 months of the start of irradiation) in the first group to 5 per cent in the last compared with 2 per cent incidence in irradiated controls. ...

‘What Lewis did, and which I have not copied, was to include in his table another group - spontaneous incidence of leukemia (Brooklyn, N.Y.) - who are taken to have received only natural background radiation throughout life at the very low dose-rate of 0.1-0.2 rad per year: the best estimate is listed as 2×10^{-6} like the others in the table. But the value of 2×10^{-6} was not calculated from the data as for the other groups; it was merely adopted. By its adoption and multiplication with the average age in years of Brooklyners - 33.7 years and radiation dose per year of 0.1-0.2 rad - a mortality rate of 7 to 13 cases per million per year due to background radiation was deduced, or some 10-20 per cent of the observed rate of 65 cases per million per year. ...

‘All these points are very much against the basic hypothesis of **Lewis** of a linear relation of dose to leukemic effect irrespective of time. Unhappily it is not possible to claim for **Lewis**’s work as others have done, “It is now possible to calculate - within narrow limits - how many deaths from leukemia will result in any population from an increase in fall-out or other source of radiation” [Leading article in *Science*, vol. 125, p. 963, 1957]. This is just wishful journalese.

‘The burning questions to me are not what are the numbers of leukemia to be expected from atom bombs or radiotherapy, but what is to be expected from natural background Furthermore, to obtain estimates of these, I believe it is wrong to go to [1950s inaccurate, dose rate effect ignoring, data from] atom bombs, where the radiations are qualitatively different [i.e., including effects from neutrons] and, more important, the dose-rate outstandingly different.’

Samuel Glasstone and Philip J. Dolan, *The Effects of Nuclear Weapons*, 3rd ed., 1977, pp. 611-3:

‘From the earlier studies of radiation-induced mutations, made with fruitflies [by Nobel Laureate Hermann J. Muller and other geneticists who worked on plants, who falsely hyped their insect and plant data as valid for mammals like humans during the June 1957 U.S. Congressional Hearings on fallout effects], it appeared that the number (or frequency) of mutations in a given population ... is proportional to the total dose ... More recent experiments with mice, however, have shown that these conclusions need to be revised, at least for mammals. [***Mammals are biologically closer to humans, in respect to DNA repair mechanisms, than short-lived insects whose life cycles are too small to have forced the evolutionary development of advanced DNA repair mechanisms, unlike mammals that need to survive for decades before reproducing.***] When exposed to X-rays or gamma rays, the mutation frequency in these animals has been found to be dependent on the exposure (or dose) rate ...

‘At an exposure rate of 0.009 roentgen per minute [0.54 R/hour], the total mutation frequency in female mice is indistinguishable from the spontaneous frequency. [Emphasis added.] **There thus seems to be an exposure-rate threshold below which radiation-induced mutations are absent** ... with adult female mice ... a delay of at least seven weeks between exposure to a substantial dose of radiation, either neutrons or gamma rays, and conception causes the mutation frequency in the offspring to drop almost to zero. ... **recovery** in the female members of the population would bring about a substantial reduction in the ‘load’ of mutations in subsequent generations.’

George Bernard Shaw cynically explains groupthink brainwashing bias:

‘We cannot help it because we are so constituted that we always believe finally what we wish to believe. The moment we want to believe something, we suddenly see all the arguments for it and become blind to the arguments against it. The moment we want to disbelieve anything we have previously believed, we suddenly discover not only that there is a mass of evidence against, but that this evidence was staring us in the face all the time.’

From the essay titled ‘What is Science?’ by Professor Richard P. Feynman, presented at the fifteenth annual meeting of the National Science Teachers Association, 1966 in New York City, and published in *The Physics Teacher*, vol. 7, issue 6, 1968, pp. 313-20:

‘... great religions are dissipated by following form without remembering the direct content of the teaching of the great leaders. In the same way, it is possible to follow form and call it science, but that is pseudo-science. In this way, we all suffer from the kind of tyranny we have today in the many institutions that have come under the influence of pseudoscientific advisers.

‘We have many studies in teaching, for example, in which people make observations, make lists, do statistics, and so on, but these do not thereby become established science, established knowledge. They are merely an imitative form of science analogous to the South Sea Islanders’ airfields - radio towers, etc., made out of wood. The islanders expect a great airplane to arrive. They even build wooden airplanes of the same shape as they see in the foreigners’ airfields around them, but strangely enough, their wood planes do not fly. The result of this pseudoscientific imitation is to produce experts, which many of you are. ... you teachers, who are really teaching children at the bottom of the heap, can maybe doubt the experts. As a matter of fact, I can also define science another way: Science is the belief in the ignorance of experts.’

Richard P. Feynman, ‘This Unscientific Age’, in *The Meaning of It All*, Penguin Books, London, 1998, pages 106-9:

‘Now, I say if a man is absolutely honest and wants to protect the populace from the effects of radioactivity, which is what our scientific friends often say they are trying to do, then he should work on the biggest number, not on the smallest number, and he should try to point out that the [natural cosmic] radioactivity which is absorbed by living in the city of Denver is so much more serious [than the smaller doses from nuclear explosions] ... that all the people of Denver ought to move to lower altitudes.’

Feynman is *not* making a point about low level radiation effects, but about the politics of ignoring the massive natural background radiation dose, while provoking hysteria over much smaller measured fallout pollution radiation doses. Why is the anti-nuclear lobby so concerned about banning nuclear energy - which is not possible even in principle since most of our nuclear radiation is from the sun and from supernova debris contaminating the Earth from the explosion that created the solar system circa 4,540 million years ago - when they could cause much bigger radiation dose reductions to the

population by concentrating on the bigger radiation source, natural background radiation. It is possible to shield natural background radiation by the air, e.g. by moving the population of high altitude cities to lower altitudes where there is more air between the people and outer space, or banning the use of high-altitude jet aircraft. The anti-nuclear lobby, as Feynman stated back in the 1960s, didn't crusade to reduce the bigger dose from background radiation. Instead they chose to argue against the *much smaller* doses from fallout pollution. Feynman's argument is still today falsely interpreted as a political statement, when it is actually exposing pseudo-science and countering political propaganda. It is still ignored by the media. It has been pointed out by Senator Hickenlooper on page 1060 of the May-June 1957 U.S. Congressional Hearings before the Special Subcommittee on Radiation of the Joint Committee on Atomic Energy, *The Nature of Radioactive Fallout and Its Effects on Man*:

'I presume all of us would earnestly hope that we never had to test atomic weapons ... but by the same token I presume that we want to save thousands of lives in this country every year and we could just abolish the manufacture of [road accident causing] automobiles ...'

Dihydrogen monoxide is a potentially very dangerous chemical containing hydrogen and oxygen which has caused numerous severe burns by scalding and deaths by drowning, contributes to the greenhouse effect, accelerates corrosion and rusting of many metals, and contributes to the erosion of our natural landscape: 'Dihydrogen monoxide (DHMO) is colorless, odorless, tasteless, and kills uncounted thousands of people every year. Most of these deaths are caused by accidental inhalation of DHMO, but the dangers of dihydrogen monoxide do not end there. Prolonged exposure to its solid form causes severe tissue damage. Symptoms of DHMO ingestion can include excessive sweating and urination, and possibly a bloated feeling, nausea, vomiting and body electrolyte imbalance. For those who have become dependent, DHMO withdrawal means certain death.'

From the site for the petition against dihydrogen monoxide: **'Please sign this petition and help stop This Invisible Killer. Get the government to do something now. ... Contamination Is Reaching Epidemic Proportions! Quantities of dihydrogen monoxide have been found in almost every stream, lake, and reservoir in America today. But the pollution is global, and the contaminant has even been found in Antarctic ice. DHMO has caused millions of dollars of property damage in the Midwest, and recently California.'**

A recent example of the pseudoscientific radiation 'education' masquerading as science that Feynman (quoted above) objected to in the 1960s was published in 2009 in an article called 'The proportion of childhood leukaemia incidence in Great Britain that may be caused by natural background ionizing radiation' in *Leukemia*, vol. 23 (2009), pp. 770–776, which falsely asserts - in contradiction to the evidence that the no-threshold model is *contrary* to Hiroshima and Nagasaki data: 'Risk models based primarily on studies of the Japanese atomic bomb survivors imply that low-level exposure to ionizing radiation, including ubiquitous natural background radiation, also raises the risk of childhood leukaemia. Using two sets of recently published leukaemia risk models and estimates of natural background radiation red-bone-marrow doses received by children, about 20% of the cases of childhood leukaemia in Great Britain are predicted to be attributable to this source.' The authors of this pseudoscience which is the opposite of the facts are R. Wakeford (Dalton Nuclear Institute, University of Manchester, Manchester, UK), G. M. Kendall (Childhood Cancer Research Group, Oxford, UK), and M. P. Little (Department of Epidemiology and Public Health, Imperial College, London, UK). It is disgusting and sinful that the facts about childhood leukemia are being lied on so blatantly for non-scientific purposes, and it is to be hoped that these leukemia investigators will either correct their errors or alternatively be banned from using scientific literature to promote false dogma for deception until they mend the error of their ways and repent their sins in this matter.

Protein P53, discovered only in 1979, is encoded by gene TP53, which occurs on human chromosome 17. P53 also occurs in other mammals including mice, rats and dogs. P53 is one of the proteins which continually repairs breaks in DNA, which easily breaks at body temperature: the DNA in each cell of the human body suffers at least two single strand breaks every second, and one double strand (i.e. complete double helix) DNA break occurs at least once every 2 hours (5% of radiation-induced DNA breaks are double strand breaks, while 0.007% of spontaneous DNA breaks at body temperature are double strand breaks)! Cancer occurs when several breaks in DNA happen to occur by chance at nearly the same time, giving several loose strand ends at once, which repair proteins like P53 then repair incorrectly, causing a mutation which can be proliferated somatically. This cannot occur when only one break occurs, because only two loose ends are produced, and P53 will reattach them correctly. But if low-LET ionising radiation levels are increased to a certain extent, causing more single strand breaks, P53 works faster and is able deal with faster breaks as they occur, so that multiple broken strand ends do not arise. This prevents DNA strands being repaired incorrectly, and prevents cancer - a result of mutation caused by faults in DNA - from arising. Too much radiation of course overloads the P53 repair mechanism, and then it cannot repair breaks as they occur, so multiple breaks begin to appear and loose ends of DNA are wrongly connected by P53, causing an increased cancer risk.

1. DNA-damaging free radicals are equivalent to a source of sparks which is always present naturally.
2. Cancer is equivalent the fire you get if the sparks are allowed to ignite the gasoline, i.e. if the free radicals are allowed to damage DNA without the damage being repaired.
3. Protein P53 is equivalent to a fire suppression system which is constantly damping out the sparks, or repairing the damaged DNA so that cancer doesn't occur.

In this way of thinking, the ‘cause’ of cancer will be down to a failure of a DNA repairing enzyme like protein P53 to repair the damage.

Dr Jane Orient, 'Homeland Security for Physicians', *Journal of American Physicians and Surgeons*, vol. 11, number 3, Fall 2006, pp. 75-9:

'In the 1960s, a group of activist physicians called Physicians for Social Responsibility (PSR) undertook to "educate the medical profession and the world about the dangers of nuclear weapons," beginning with a series of articles in the *New England Journal of Medicine*. [Note that journal was publishing information for anti-civil defense propaganda back in 1949, e.g. the article in volume 241, pp. 647-53 of *New England Journal of Medicine* which falsely suggests that civil defense in nuclear war would be hopeless because a single burned patient in 1947 with 40% body area burns required 42 oxygen tanks, 36 pints of plasma, 40 pints of whole blood, 104 pints of fluids, 4,300 m of gauze, 3 nurses and 2 doctors. First, only unclothed persons in direct line of sight without shadowing can get 40% body area burns from thermal radiation, second, duck and cover offers protection in a nuclear attack warning, and G. V. LeRoy had already published, two years earlier, in J.A.M.A., volume 134, 1947, pp. 1143-8, that less than 5% of burns in Hiroshima and Nagasaki were caused by building and debris fires. In medicine it is always possible to expend vast resources on patients who are fatally injured. In a mass casualty situation, doctors should not give up just because they don't have unlimited resources; as at Hiroshima and Nagasaki, they would need to do their best with what they have.] On its website, www.psr.org, the group boasts that it "led the campaign to end atmospheric nuclear testing." With this campaign, the linear no-threshold (LNT) theory of radiation carcinogenesis became entrenched. It enabled activists to calculate enormous numbers of potential casualties by taking a tiny risk and multiplying it by the population of the earth. As an enduring consequence, the perceived risks of radiation are far out of proportion to actual risks, causing tremendous damage to the American nuclear industry. ... Efforts to save lives were not only futile, but unethical: Any suggestion that nuclear war could be survivable increased its likelihood and was thus tantamount to warmongering, PSR spokesmen warned. ...

'For the mindset that engendered and enables this situation, which jeopardizes the existence of the United States as a nation as well as the lives of millions of its citizens, some American physicians and certain prestigious medical organizations bear a heavy responsibility.

'Ethical physicians should stand ready to help patients to the best of their ability, and not advocate sacrificing them in the name of a political agenda. **Even very basic knowledge, especially combined with simple, inexpensive advance preparations, could save countless lives.'**

Dr Theodore B. Taylor, *Proceedings of the Second Interdisciplinary Conference on Selected Effects of a General War*, DASIAC Special Report 95, July 1969, vol. 2, DASA-2019-2, AD0696959, page 298 (also [linked here](#)):

'I must just say that as far as I'm concerned I have had some doubts about whether we should have had a civil defense program in the past. I have no doubt whatsoever now, for this reason, that I've seen **ways in which the deterrent forces can fail to hold things off, so that no matter what our national leaders do, criminal organizations, what have you, groups of people over which we have no control whatsoever, can threaten other groups of people.'**

This point of Taylor is the key fact on the morality. Suppose we disarm and abandon nuclear power. That won't stop fallout from a war, terrorists, or a foreign reactor blast from coming. Civil defence knowledge is needed. Even when America has ABM, it will be vulnerable to wind carried fallout. No quantity of pacifist hot air will protect people against radiation.

Charles J. Hitch and Roland B. McKean of the RAND Corporation in their 1960 book *The Economics of Defense in the Nuclear Age*, Harvard University Press, Massachusetts, pp. 310-57:

‘With each side possessing only a small striking force, a small amount of cheating would give one side dominance over the other, and the incentive to cheat and prepare a preventative attack would be strong ... With each side possessing, say, several thousand missiles, a vast amount of cheating would be necessary to give one side the ability to wipe out the other’s striking capability. ... the more extensive a disarmament agreement is, the smaller the force that a violator would have to hide in order to achieve complete domination. Most obviously, “the abolition of the weapons necessary in a general or ‘unlimited’ war” would offer the most insuperable obstacles to an inspection plan, since the violator could gain an overwhelming advantage from the concealment of even a few weapons.’

Disarmament after World War I caused the following problem which led to World War II (reported by Winston S. Churchill in the London Daily Express newspaper of November 1, 1934):

‘Germany is arming secretly, illegally and rapidly. A reign of terror exists in Germany to keep secret the feverish and terrible preparations they are making.’

British Prime Minister Thatcher’s address to the United Nations General Assembly on disarmament on 23 June 1982, where she pointed out that in

the years since the nuclear attacks on Hiroshima and Nagasaki, 10 million people had been killed by 140 non-nuclear conflicts:

‘The fundamental risk to peace is not the existence of weapons of particular types. It is the disposition on the part of some states to impose change on others by resorting to force against other nations ... Aggressors do not start wars because an adversary has built up his own strength. They start wars because they believe they can gain more by going to war than by remaining at peace.’

J. D. Culshaw, the then Director of the U.K. Home Office Scientific Advisory Branch, stated in his article in the Scientific Advisory Branch journal *Fission Fragments*, September 1972 (issue No. 19), classified 'Restricted':

'Apart from those who don't want to know or can't be bothered, there seem to be three major schools of thought about the nature of a possible Third World War ...

* 'The first group think of something like World War II but a little worse ...

* '... the second of World War II but very much worse ...

* 'and the third group think in terms of a catastrophe ...

'When the Armageddon concept is in favour, the suggestion that such problems exist leads to "way out" research on these phenomena, and it is sufficient to mention a new catastrophic threat [e.g., 10 years later this was done by Sagan with "nuclear winter" hype, which turned out to be fake because modern concrete cities can't produce firestorms like 1940s wooden-built areas of Hamburg, Dresden and Hiroshima] to stimulate research into the possibilities of it arising. The underlying appeal of this concept is that if one could show that the execution of all out nuclear, biological or chemical warfare would precipitate the end of the world, no one but a mad man would be prepared to initiate such a war. [However, as history proves, plenty of mad men end up gaining power and leading countries into wars.]'

J. K. S. Clayton, then Director of the U.K. Home Office Scientific Advisory Branch, stated in his introduction, entitled *The Challenge - Why Home Defence?*, to the 1977 Home Office Scientific Advisory Branch *Training Manual for Scientific Advisers*:

'Since 1945 we have had nine wars - in Korea, Malaysia and Vietnam, between China and India, China and Russia, India and Pakistan and between the Arabs and Israelis on three occasions. We have had confrontations between East and West over Berlin, Formosa and Cuba. There have been civil wars or rebellions in no less than eleven countries and invasions or threatened invasions of another five. Whilst it is not suggested that all these incidents could have resulted in major wars, they do indicate the aptitude of mankind to resort to a forceful solution of its problems, sometimes with success. ...'

It is estimated that Mongol invaders exterminated 35 million Chinese between 1311-40, without modern weapons. Communist Chinese killed 26.3 million dissenters between 1949 and May 1965, according to detailed data compiled by the Russians on 7 April 1969. The Soviet communist dictatorship killed 40 million dissenters, mainly owners of small farms, between 1917-59. Conventional (non-nuclear) air raids on Japan killed 600,000 during World War II. The single incendiary air raid on Tokyo on 10 March 1945 killed 140,000 people (more than the total for nuclear bombs on Hiroshima and Nagasaki combined) at much less than the \$2 billion expense of the Hiroshima and Nagasaki nuclear bombs! Non-nuclear air raids on Germany during World War II killed 593,000 civilians. The argument that the enemy will continue stocking megaton fallout weapons if we go to cleaner weapons is irrelevant for deterrence, since we're not planning to start war, just to credibly deter invasions. You should not try to lower your standards of warfare to those of your enemy to appease groupthink taboos, or you will end up like Britain's leaders in the 1930s, trying to collaborate with fascists for popular applause.

House of Lords debate *Nuclear Weapons: Destructive Power*, published in Hansard, 14 June 1988:

Lord Hailsham of Saint Marylebone: ‘My Lords, if we are going into the question of lethality of weapons and seek thereby to isolate the nuclear as distinct from the so-called conventional range, is there not a danger that the public may think that Vimy, Passchendaele and Dresden were all right—sort of tea parties—and that nuclear war is something which in itself is unacceptable?’

Lord Trefgarne: ‘My Lords, the policy of making Europe, or the rest of the world, safe for conventional war is not one that I support.’

House of Commons debate *Civil Defence* published in Hansard, 26 October 1983:

Mr. Bill Walker (Tayside, North): ‘I remind the House that more people died at Stalingrad than at Hiroshima or Nagasaki. Yet people talk about fighting a conventional war in Europe as if it were acceptable. One rarely sees demonstrations by the so-called peace movement against a conventional war in Europe, but it could be nothing but ghastly and horrendous. The casualties would certainly exceed those at Stalingrad, and that cannot be acceptable to anyone who wants peace’

On 29 October 1982, Thatcher stated of the Berlin Wall: 'In every decade since the war the Soviet leaders have been reminded that their pitiless ideology only survives because it is maintained by force. But the day comes when the anger and frustration of the people is so great that force cannot contain it. Then the edifice cracks: the mortar crumbles ... one day, liberty will dawn on the other side of the wall.'

On 22 November 1990, she said: 'Today, we have a Europe ... where the threat to our security from the overwhelming conventional forces of the Warsaw Pact has been removed; where the Berlin Wall has been torn down and the Cold War is at an end. These immense changes did not come about by chance. They have been achieved by strength and resolution in defence, and by a refusal ever to be intimidated.'

'The case for civil defence stands regardless of whether a nuclear deterrent is necessary or not. ... Even if the U.K. were not itself at war, we would be as powerless to prevent fallout from a nuclear explosion crossing the sea as was King Canute to stop the tide.' - U.K. Home Office leaflet, Civil Defence, 1982.

'... peace cannot be guaranteed absolutely. Nobody can be certain, no matter what policies this or any other Government were to adopt, that the United Kingdom would never again be attacked. Also we cannot tell what form such an attack might take. Current strategic thinking suggests that if war were to break out it would start with a period of conventional hostilities of uncertain duration which might or might not escalate to nuclear conflict. ... while nuclear weapons exist there must always be a chance, however small, that they will be used against us [like gas bombs in World War II]. ... as a consequence of war between other nations in which we were not involved fall out from nuclear explosions could fall on a neutral Britain. ... conventional war is not the soft option that is sometimes suggested. It is also too easily forgotten that in World War II some 50 million people died and that conventional weapons have gone on killing people ever since 1945 without respite.' - - **The Minister of State, Scottish Office (Lord Gray of Contin), House of Lords debate on Civil Defence (General Local Authority Functions) Regulations, Hansard, vol. 444, cc. 523-49, 1 November 1983.**

'All of us are living in the light and warmth of a huge hydrogen bomb, 860,000 miles across and 93 million miles away, which is in a state of continuous explosion.' - Dr Isaac Asimov.

'Dr Edward Teller remarked recently that the origin of the earth was somewhat like the explosion of the atomic bomb...' – Dr Harold C. Urey, *The Planets: Their Origin and Development*, Yale University Press, New Haven, 1952, p. ix.

'But compared with a supernova a hydrogen bomb is the merest trifle. For a supernova is equal in violence to about a million million million million hydrogen bombs all going off at the same time.' – Sir Fred Hoyle (1915-2001), *The Nature of the Universe*, Pelican Books, London, 1963, p. 75.

'In fact, physicists find plenty of interesting and novel physics in the environment of a nuclear explosion. Some of the physical phenomena are valuable objects of research, and promise to provide further understanding of nature.' – Dr Harold L. Brode, The RAND Corporation, 'Review of Nuclear Weapons Effects,' *Annual Review of Nuclear Science*, Volume 18, 1968, pp. 153-202.

'It seems that similarities do exist between the processes of formation of single particles from nuclear explosions and formation of the solar system from the debris of a [4 x 10²⁸ megatons of TNT equivalent, type Ia] supernova explosion. We may be able to learn much more about the origin of the earth, by further investigating the process of radioactive fallout from the nuclear weapons tests.' – **Dr Paul K. Kuroda (1917-2001)**, University of Arkansas, 'Radioactive Fallout in Astronomical Settings: Plutonium-244 in the Early Environment of the Solar System,' pages 83-96 of ***Radionuclides in the Environment: A Symposium Sponsored By the Division of Nuclear Chemistry and Technology At the 155th Meeting of the American Chemical Society, San Francisco, California, April 1-3, 1968***, edited by Symposium Chairman Dr Edward C. Freiling (1922-2000) of the U.S. Naval Radiological Defense Laboratory, Advances in Chemistry Series No. 93, American Chemical Society, Washington, D.C., 1970.

Dr Paul K. Kuroda (1917-2001) in 1956 correctly predicted the existence of water-moderated natural nuclear reactors in flooded uranium ore seams, which were discovered in 1972 by French physicist Francis Perrin in three ore deposits at Oklo in Gabon, where sixteen sites operated as natural nuclear reactors with self-sustaining nuclear fission 2,000 million years ago, each lasting several hundred thousand years, averaging 100 kW. The radioactive waste they generated remained in situ for a period of 2,000,000,000 years without escaping. They were discovered during investigations into why the U-235 content of the uranium in the ore was only 0.7171% instead of the normal 0.7202%. Some of the ore, in the middle of the natural reactors, had a U-235 isotopic abundance of just 0.440%. Kuroda's brilliant paper is entitled, 'On the Nuclear Physical Stability of the Uranium Minerals', published in the *Journal of Chemical Physics*, vol. 25 (1956), pp. 781–782 and 1295–1296.

A type Ia supernova explosion, always yielding 4 x 10²⁸ megatons of TNT equivalent, results from the critical mass effect of the collapse of a white dwarf as soon as its mass exceeds 1.4 solar masses due to matter falling in from a companion star. The degenerate electron gas in the white dwarf is then no longer able to support the pressure from the weight of gas, which collapses, thereby releasing enough gravitational potential energy as heat and pressure to cause the fusion of carbon and oxygen into heavy elements, creating massive amounts of radioactive nuclides, particularly intensely

radioactive nickel-56, but half of all other nucleides (including uranium and heavier) are also produced by the '**R**' (**rapid**) **process of successive neutron captures by fusion products in supernovae explosions**. Type Ia supernovae occur typically every 400 years in the Milky Way galaxy. On 4 July 1054, Chinese astronomers observed in the sky (without optical instruments) the bright supernova in the constellation Taurus which today is still visible as the Crab Nebula through telescopes. The Crab Nebula debris has a diameter now of 7 light years and is still expanding at 800 miles/second. The supernova debris shock wave triggers star formation when it encounters hydrogen gas in space by compressing it and seeding it with debris; bright stars are observed in the Orion Halo, the 300 light year diameter remains of a supernova. It is estimated that when the solar system was forming 4,540 million years ago, a supernova occurred around 100 light years away, and the heavy radioactive debris shock wave expanded at 1,000 miles/second. Most of the heavy elements including iron, silicon and calcium in the Earth and people are the stable end products of originally radioactive decay chains from the space burst fallout of a 7×10^{26} megatons thermonuclear explosion, created by fusion and successive neutron captures after the implosion of a white dwarf; a supernova explosion.

How would a 10^{55} megaton hydrogen bomb explosion differ from the **big bang**? Ignorant answers biased in favour of curved spacetime (ignoring quantum gravity!) abound, such as claims that explosions can't take place in 'outer space' (disagreeing with the facts from nuclear space bursts by Russia and America in 1962, not to mention natural supernova explosions in space!) and that explosions produce sound waves in air by definition! There are indeed major differences in the nuclear reactions between the big bang and a nuclear bomb. But it is helpful to notice the solid physical fact that implosion systems suggest the mechanism of gravitation: in implosion, TNT is well-known to produce an *inward* force on a bomb core, but Newton's 3rd law says there is an equal and opposite reaction force *outward*. In fact, you can't have a radially outward force without an inward reaction force! It's the rocket principle. The rocket accelerates (with force $F = ma$) *forward* by virtue of the recoil from accelerating the exhaust gas (with force $F = -ma$) in the *opposite* direction! Nothing massive accelerates without an equal and opposite reaction force. Applying this *fact* to the **measured $6 \times 10^{-10} \text{ ms}^{-2} \sim Hc$ cosmological acceleration of matter radially outward** from observers in the universe which **was predicted accurately in 1996** and later observationally discovered in 1999 (by Perlmutter, et al.), we find an outward force $F = ma$ and inward reaction force by the 3rd law. **The inward force allows quantitative predictions, and is mediated by gravitons, predicting gravitation in a checkable way (unlike string theory, which is just a landscape of 10^{500} different perturbative theories and so can't make any falsifiable predictions about gravity)**. So it seems as if nuclear explosions do indeed provide helpful analogies to natural features of the world, and the mainstream lambda-CDM model of cosmology - with its force-fitted unobserved *ad hoc* speculative 'dark energy' - ignores and sweeps under the rug major quantum gravity effects which increase the physical understanding of particle physics, particularly force unification and the relation of gravitation to the existing electroweak SU(2) x U(1) section of the Standard Model of fundamental forces.

Richard Lieu, Physics Department, University of Alabama, 'Lambda-CDM cosmology: how much suppression of credible evidence, and does the model really lead its competitors, using all evidence?', <http://arxiv.org/abs/0705.2462>.

Even Einstein grasped the possibility that general relativity's lambda-CDM model is at best just a classical approximation to quantum field theory, at the end of his life when he wrote to Besso in 1954:

'I consider it quite possible that physics cannot be based on the [classical differential equation] field principle, i.e., on continuous structures. In that case, nothing remains of my entire castle in the air, [non-quantum] gravitation theory included ...'

'Science is the organized skepticism in the reliability of expert opinion.' - Professor Richard P. Feynman (quoted by Professor Lee Smolin, *The Trouble with Physics*, Houghton-Mifflin, New York, 2006, p. 307).

'The expression of dissenting views may not seem like much of a threat to a powerful organization, yet sometimes it triggers an amazingly hostile response. The reason is that a single dissenter can puncture an illusion of unanimity. ... Among those suppressed have been the engineers who tried to point out problems with the Challenger space shuttle that caused it to blow up. More fundamentally, suppression is a denial of the open dialogue and debate that are the foundation of a free society. Even worse than the silencing of dissidents is the chilling effect such practices have on others. For every individual who speaks out, numerous others decide to play it safe and keep quiet. More serious than external censorship is the problem of self-censorship.'

— Professor Brian Martin, University of Wollongong, 'Stamping Out Dissent', Newsweek, 26 April 1993, pp. 49-50

In 1896, Sir James Mackenzie-Davidson asked Wilhelm Röntgen, who discovered X-rays in 1895: 'What did you think?' Röntgen replied: 'I did not think, I investigated.' The reason? Cathode ray expert J. J. Thomson in 1894 saw glass fluorescence far from a tube, but due to prejudice (expert opinion) he avoided investigating that X-ray evidence! 'Science is the organized skepticism in the reliability of expert opinion.' - Richard Feynman, in Lee Smolin, *The Trouble with Physics*, Houghton-Mifflin, 2006, p. 307.

Mathematical symbols in this blog: your computer's browser needs access to standard character symbol sets to display Greek symbols for

mathematical physics. If you don't have the symbol character sets installed, the density symbol ' ρ ' (*Rho*) will appear as 'r' and the ' π ' (*Pi*) symbol will as 'p', causing confusion with the use of 'r' for radius and 'p' for momentum in formulae. This problem exists with Mozilla Firefox 3, but not with Microsoft Explorer which displays Greek symbols.

About Me



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<http://www.math.columbia.edu/~woit/wordpress/?p=273#comment-5322>. <http://www.math.columbia.edu/~woit/wordpress/?p=353&cpag=1#comment-8728>. <http://www.math.columbia.edu/~woit/wordpress/?p=215#comment-4082>.

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From 1945-62, America tested 216 nuclear weapons in the atmosphere, totalling 154 megatons, with a mean yield of 713 kilotons

From 1949-62, Russia tested 214 nuclear weapons in the atmosphere, totalling 281 megatons, with a mean yield of 1.31 megatons

From 1952-8, Britain tested 21 nuclear weapons in the atmosphere, totalling 10.8 megatons, with a mean yield of 514 kilotons

From 1960-74, France tested 46 nuclear weapons in the atmosphere, totalling 11.4 megatons, with a mean yield of 248 kilotons

From 1964-80, China tested 23 nuclear weapons in the atmosphere, totalling 21.5 megatons, with a mean yield of 935 kilotons

In summary, from 1945-80, America, Russia, Britain, France and China tested 520 nuclear weapons in the atmosphere, totalling 478.7 megatons, with a mean yield of 921 kilotons

Mean yield of the 5,192 nuclear warheads and bombs in the deployed Russian nuclear stockpile as of January 2009: 0.317 Mt. Total yield: 1,646 Mt.

Mean yield of the 4,552 nuclear warheads and bombs in the deployed U.S. nuclear stockpile as of January 2007: 0.257 Mt. Total yield: 1,172 Mt.

For diffraction damage where damage areas scale as the two-thirds power of explosive yield, this stockpile's area damage potential can be compared to the 20,000,000 conventional bombs of 100 kg size (2 megatons of TNT equivalent total *energy*) dropped on Germany during World War II: (Total nuclear bomb blast diffraction damaged ground *area*)/(Total conventional blast diffraction damaged ground *area* to Germany during World War II) = $[4,552 \cdot (0.257 \text{ Mt})^{2/3}] / [20,000,000 \cdot (0.0000001 \text{ Mt})^{2/3}] = 1,840/431 = 4.3$. Thus, although the entire U.S. stockpile has a TNT *energy* equivalent to 586 times that of the 2 megatons of conventional bombs dropped on Germany in World War II, it is only capable of causing 4.3 times as much diffraction type damage area, because *any given amount of explosive energy is far more efficient when distributed over many small explosions than in a single large explosion! Large explosions are inefficient because they cause unintended collateral damage, wasting energy off the target area and injuring or damaging unintended targets!*

In a controlled sample of 36,500 survivors, 89 people got leukemia over a 40 year period, above the number in the unexposed control group. (Data: *Radiation Research*, volume 146, 1996, pages 1-27.) Over 40 years, in 36,500 survivors monitored, there were 176 leukemia deaths which is 89 more than the control (unexposed) group got naturally. There were 4,687 other cancer deaths, but that was merely 339 above the number in the control (unexposed) group, so this is statistically a much smaller rise than the leukemia result. Natural leukemia rates, which are very low in any case, were increased by 51% in the irradiated survivors, but other cancers were merely increased by just 7%. Adding all the cancers together, the total was 4,863 cancers (virtually all natural cancer, nothing whatsoever to do with radiation), which is just 428 more than the unexposed control group. Hence, the total increase over the natural cancer rate due to bomb exposure was only 9%, spread over a period of 40 years. There was no increase whatsoever in genetic malformations.

There should be a note here about how unnatural radioactive pollution is (not) in space: the earth's atmosphere is a radiation shield equivalent to being protected behind a layer of water 10 metres thick. This reduces the cosmic background radiation by a factor of 100 of what it would be without the earth's atmosphere. Away from the largely uninhabited poles, the Earth's magnetic field also protects us against charged cosmic radiations, which are deflected and end up spiralling around the magnetic field at high altitude, in the Van Allen trapped radiation belts. *On the Moon, for example, there is no atmosphere or significant magnetic field so the natural background radiation exposure rate at solar minimum is 1 milliRoentgen per hour (about 10 microSieverts/hour) some 100 times that on the Earth (0.010 milliRoentgen per hour or about 0.10 microSieverts/hour). The Apollo astronauts visiting the Moon wore dosimeters and they received an average of 275 milliRoentgens (about 2.75 milliSieverts) of radiation (well over a year's exposure to natural background at sea level) in over just 19.5 days. It is a lot more than that during a solar flare, which is one of the concerns for astronauts to avoid*

(micrometeorites are another concern in a soft spacesuit).

The higher up you are above sea level, the less of the atmosphere there is between you and space, so the less shielding you have to protect you from the intense cosmic space radiations (emitted by thermonuclear reactors we call 'stars', as well as distant supernovae explosions). At sea level, the air above you constitutes a radiation shield of 10 tons per square metre or the equivalent of having a 10 metres thick water shield between you and outer space. As you go up a mountain or up in an aircraft, the amount of atmosphere between you and space decreases, thus radiation levels increase with altitude because there is less shielding. *The normal background radiation exposure rate shoots up by a factor of 20, from 0.010 to 0.20 milliRoentgens per hour, when any airplane ascends from sea level to 36,000 feet cruising altitude.* (The now obsolete British Concorde supersonic transport used to maintain radiation-monitoring equipment so that it could drop to lower-altitude flight routes if excessive cosmic radiation due to solar storms were detected.) Flight aircrew get more radiation exposure than many nuclear industry workers at nuclear power plants. Residents of the high altitude city of Denver get 100 milliRoentgens (about 1 milliSievert) more annual exposure than a resident of Washington, D.C., but the mainstream anti-radiation cranks don't campaign for the city to be shut to save kids radiation exposure, for mountain climbing to be banned, etc.!

1994 revised Introduction to Kearny's Nuclear War Survival Skills, by Dr Edward Teller, January 14, 1994:

'If defense is neglected these weapons of attack become effective. They become available and desirable in the eyes of an imperialist dictator, even if his means are limited. Weapons of mass destruction could become equalizers between nations big and small, highly developed and primitive, if defense is neglected. If defense is developed and if it is made available for general prevention of war, weapons of aggression will become less desirable. Thus defense makes war itself less probable. ... One psychological defense mechanism against danger is to forget about it. This attitude is as common as it is disastrous. It may turn a limited danger into a fatal difficulty.'

Advice of Robert Watson-Watt (Chief Scientist on the World War II British Radar Project, defending Britain against enemy attacks): 'Give them the third best to go on with, the second best comes too late, the best never comes.'

From Wikipedia (a source of groupthink): 'Groupthink is a type of thought exhibited by group members who try to minimize conflict and reach consensus without critically testing, analyzing, and evaluating ideas. Individual creativity, uniqueness, and independent thinking are lost in the pursuit of group cohesiveness, as are the advantages of reasonable balance in choice and thought that might normally be obtained by making decisions as a group. During groupthink, members of the group avoid promoting viewpoints outside the comfort zone of consensus thinking. A variety of motives for this may exist such as a desire to avoid being seen as foolish, or a desire to avoid embarrassing or angering other members of the group. Groupthink may cause groups to make hasty, irrational decisions, where individual doubts are set aside, for fear of upsetting the group's balance.'

Links

- ◆ [Google News](#)
- ◆ [Dr Carl E. Baum's EMP theory and interaction notes](#)
- ◆ [The Atomic Heritage Foundation](#)
- ◆ [Radiation Effects Research Foundation lumps data together to cover up benefits of low dose radiation in Hiroshima and Nagasaki Life Span Study!](#)
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- ◆ [Essays by 1950s American nuclear weapon effects test \(and neutron bomb design\) experts, discrediting anti-civil defence propaganda](#)
- ◆ [Neutron bomb inventor Samuel Cohen's 2006 book on the history of the neutron bomb, the most moral weapon ever invented due to its purely military deterrent capabilities, and the pseudo-scientific propaganda war he has had to endure from the enemies of deterrence](#)

- ◆ Karl-Ludvig Grønhaug's EMP reports page with useful PDF downloads on prompt EMP and MHD-EMP measurements from nuclear tests (Norwegian language)
- ◆ Colonel Derek L. Duke's factual book on nuclear weapons accidents, *Chasing Loose Nukes, as told to Fred Dungan*
- ◆ The H-Bomb and the birth of the Universe: 'For 100 Million years after time began, the universe was dark as pitch. The clouds of hydrogen condensed into huge nuclear fireballs. That moment-when the universe first lit up-was the moment of creation that matters...'
- ◆ American *EMP Interaction* manual: comprehensive theory of both the EMP source mechanism and the EMP pick-up in cables and antenna by electromagnetic inductance (30 MB PDF file)
- ◆ British Mission to Japan, *The Effects of the Atomic Bombs at Hiroshima and Nagasaki*, H. M. Stationery Office, London, 1946 (high quality 42.5 MB pdf file).
- ◆ 1950 edition (high quality 82.7 MB PDF file) of U.S. Department of Defense book *The Effects of Atomic Weapons*
- ◆ 1957 edition (high quality 90.8 MB PDF file) of subsequently deleted sections on nuclear tests of civil defense countermeasures from U.S. Department of Defense book *The Effects of Nuclear Weapons*
- ◆ 1957 edition (low quality 30.6 MB PDF file) of entire U.S. Department of Defense book *The Effects of Nuclear Weapons*
- ◆ 1962/64 edition (high quality 188 MB PDF file) of major revised sections in the U.S. Department of Defense book *The Effects of Nuclear Weapons*
- ◆ 1962/64 edition (high quality 43.8 MB PDF file) of 74 pages of subsequently deleted material dealing with thermal ignition of houses at nuclear tests and civil defense countermeasures chapter, from the U.S. Department of Defense book *The Effects of Nuclear Weapons*
- ◆ 1977 edition (single 36.8 MB PDF file) of U.S. Department of Defense book *The Effects of Nuclear Weapons*
- ◆ Bill Forstchen, "One Second After" book about EMP attack risk and its effects on USA.
- ◆ U.S. Department of Energy Opennet Documents Online (includes many Nevada and Pacific nuclear test reports as PDF files)
- ◆ Defense Technical Information Center (DTIC)'s Scientific and Technical Information Network (STINET) Service (other declassified Nevada and Pacific test reports)
- ◆ Highlights from ABM testing history
- ◆ THAAD Goes Another ABM Test
- ◆ Alex Wellerstein's Restricted Data blog contains some interesting news (but beware of his uncritical use of unobstructed dry desert and nude skin thermal radiation and other effects predictions from the 1977 edition of Glasstone and Dolan; he deletes critically objective comments and pretends that honest criticisms of propaganda as being ignorant deception are rude as an excuse for ignoring the facts and refusing to engage in objective discussion of controversial aspects of this topic; basically if you pay homage and engage in groupthink bias you may be tolerated).
- ◆ Carey Sublette's Nuclear Weapon Archive (it contains errors from Chuck Hansen's compilation, and it is concentrated on bomb building, not on civil defence countermeasure evaluations done at nuclear tests; note that Chuck Hansen's books and CDs give a false quotation from Neil O' Hines's book *Proving Ground* on the effects of the 1952 Mike explosion on nearby Engebi Island, where Hines later in the book states that the native rats in fact *survived the intense close-in blast, heat and fallout under a few unches of soil, despite the initial ignorant belief that they could not have survived!!!*)

- Quantum Field Theory
- Los Alamos Science journal
- Excellent particle physics gauge theory (fundamental force interaction) issue of Los Alamos Science journal
-



15 MT BRAVO, 3.5 SECONDS. PHOTOGRAPHED FROM 12,500 FT

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◆ Feynman and the bomb at Los Alamos, versus Dr Alex...

◆ Thermal radiation shielding by crater ejecta in th...

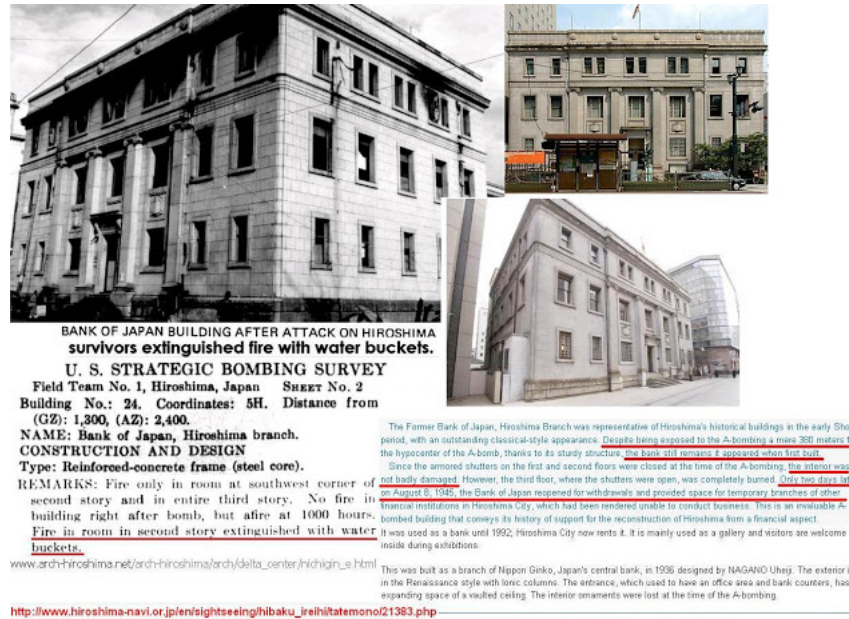
◆ Hiroshima's air raid shelters were unoccupied beca...

◆ UK Home Office Scientific Advisory Branch debunked...

◆ In 1,881 burns cases in Hiroshima, only 17 (or 0.9...

◆ Anti-nuclear prejudice in the BBC, and its negativ...

- ◆ North Korea's Kim Jong-Un on 8 May 2015 successful...
- ◆ Dr Harold L. Brode's new book, Nuclear Weapons in ...
- ◆ 800 war migrants drowned on 22 April by EU policy:...
- ◆ Photographed fireball shielding by cloud cover in ...



The Bank of Japan, Hiroshima, survived 380 m from Ground Zero, within the firestorm area, when fires were extinguished by water buckets by its survivors, the majority of people in the building having survived. Secret US Strategic Bombing Survey report proves civil defense for modern concrete buildings is effective. The building was reopened as a bank on 8 August, merely two days after nuclear attack, and continued in use as a bank until 1992. It remains in Hiroshima. This beautifully designed and sturdy reinforced concrete building was designed in 1936 by Nagano Uheiji.